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ABSTRACT

A statistical and narrative summary of the results of the 1985-1986 Survey of Earned Doctorates is presented. Basic information, such as sex, field of study, institution, and year of Ph.D., is presented for all of the 31,770 doctorate recipients, while complete questionnaire data are included for 29,696 Ph.D. recipients. Research and applied-research doctorates in all fields are covered, excluding degrees such as the M.D., D.D.S, O.D., D.V.M., and J.D. Tables provide the following information for 1986: number of doctorate recipients by sex and subfield; number of doctorate recipients by citizenship, racial/ethnic group, and subfield; statistical profile of doctorate recipients by field of doctorate; sources of support in graduate school of doctorate recipients by sex and summary field; state of doctoral institution of doctorate recipients by sex and summary field; and statistical profile of doctorate recipients by racial/ethnic group and citizenship status. Also covered are: the number of doctorate recipients by subfield, 1976-1986; demographic trends of doctorate recipients in 30 selected fields, 1958-1986; and trends in postgraduation plans of doctorate recipients in 30 selected fields, 1958-1986. The questionnaire and specialties list are appended. Thirteen tables and ten figures are included. (SW)

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Summary Report 1986

Doctorate Recipients From United States Universities

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HIGHLIGHTS

- The 31,770 research doctorates earned in 1986 represented 1.8 percent more than the number earned in 1985, and they comprised the largest cohort of the past 10 years. During this period, the number of doctorates in the natural sciences and engineering was on the upswing, with the steepest climb made by engineers. The sharpest decline was in humanities, followed by education and the social sciences.

- During the past 25 years, the percentage of doctorates earned by U.S. citizens decreased from 85.6 percent (in 1962) to 72.3 percent (in 1986). Correspondingly, the percentage of temporary visa-holders increased from 10.8 to 16.6 percent of new doctorates. While the number of temporary residents increased in all fields, the largest gains were among engineers and physical scientists.

- For the most part, there has been a general erosion in the number of men earning Ph.D.s, with a corresponding gain in the number of women doctorates. In 1986, women earned 35.4 percent of the doctorate degrees from U.S. universities. Despite this advance, women comprised only 21.2 percent of new doctorates in the natural sciences and engineering.

- Changes in racial composition contrasted with stable sizes of cohorts. The numbers of both black and white Ph.D.s declined, especially within the U.S.-citizen stratum. On the other hand, Asians and Hispanics--especially temporary residents--enlarged their presence.

- Fields in which the majority or plurality of Ph.D.s reported primary support from university-related sources were the natural sciences and engineering; in all other fields, personal sources of support were more often reported. Furthermore, time trends showed a significant erosion of federal support for doctorate students in all fields.

- Doctorates in the biological sciences, especially in biochemistry, were the most likely to plan a postdoctoral study appointment (66.1 percent and 78.5 percent, respectively). The most typical reason for deciding to take a study appointment was to obtain additional research experience in their doctoral field. Of the recipients who planned employment, 19.7 percent seriously considered pursuing postdoctoral study but decided against it. The most frequent reason for deciding against the postdoctorate was having a more attractive employment opportunity.

- When the data were disaggregated below the level of broad field, some important contrasts emerged. Trend tables showed that despite the recent increase in Ph.D.s in the physical sciences, the number of mathematicians sharply declined. Recent growth in the broad field of life sciences also belied a drop in the number of biological science Ph.D.s. Conversely, an increase in clinical psychologists and economists was in contrast with the decline evidenced among social sciences overall.

- Another observation was that doctorates in some subfields tended not to resemble colleagues under the same umbrella broad field; rather, they paralleled doctorates in other broad fields. For example, economists were more like natural scientists than social scientists in their demographic characteristics, sources of support, time lapses, and postgraduation plans.

- Data disaggregation also highlighted the fact that some disciplines became predominantly female in the 1980s--health sciences, psychology, education, and languages and literature. On the other hand, women remained underrepresented (under 20 percent) in most physical sciences, engineering, and agriculture.

- Doctorate recipients evidenced different patterns of financial support not only across the seven broad fields but also within these fields. For example, 66.8 percent of clinical psychologists reported self-support as their major source in 1986, compared with 48.6 percent of other psychologists.

- Total time-lapse to degree completion has risen in every field but was evidenced mainly after 1971. The total time to earn a doctorate had declined steadily over the decade of the 1960s, while registered time rose very slightly. One implication is that external forces influenced the shortening of total time during the 1960s--perhaps through increased federal support and favorable market conditions for academicians.

- The percentage of new Ph.D.s who planned employment following the receipt of the Ph.D. has declined steadily since data were first collected in 1958, while those with study plans increased. The group with the highest percentage planning employment has been education doctorates, especially those specializing in science teaching.

Summary Report 1986

Doctorate Recipients From United States Universities

The Survey of Earned Doctorates is conducted by the
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This report has been reviewed by a group of persons other than the author according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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PREFACE

This report presents a brief summary of the results of the 1985-86 Survey of Earned Doctorates, which has been conducted each year since 1958 by the National Research Council's Office of Scientific and Engineering Personnel (OSEP) and its predecessor, the Commission on Human Resources. Questionnaire forms, distributed with the cooperation of the graduate deans of U.S. universities, are filled in by graduates as they complete all requirements for their doctoral degrees. The doctorates reported here were earned during the period July 1, 1985, through June 30, 1986, and include research and applied-research doctorates in all fields. Professional degrees such as the M.D., D.D.S., O.D., D.V.M., and J.D. are not covered by this survey. A full list of degrees included can be found on the inside back cover. For convenience throughout this report, "Ph.D." is used to represent any of the doctorate degrees covered by the survey.

Responses were received from 29,696, or 94 percent, of the 31,770 persons who earned the doctorate in fiscal year 1986. When individuals did not complete the questionnaire, abbreviated records were compiled using information from the universities' commencement bulletins. As a result, basic information--such as sex, field, institution, and year of Ph.D.--is available for all of the 31,770 doctorate recipients.

This Summary Report is the twentieth in an annual series of reports that began in 1967. Trend data from earlier periods can be found in the book *A Century of Doctorates: Data Analyses of Growth and Change* (National Academy of Sciences, 1978). All survey responses become part of the Doctorate Records File (DRF), a virtually complete data bank on doctorate recipients from 1920 to 1986. More than five-sixths of the 850,448 records now in the DRF have come from results of the 1958-1986 surveys. For doctorates granted during the 1920-1957 period, information was compiled from commencement bulletins, registrars' records, and other published material.

The conduct of the Survey of Earned Doctorates, the maintenance of the resulting data file, and the publication of this report are funded jointly by the National Science Foundation, the National Institutes of Health, the U.S. Department of Education, the National Endowment for the Humanities, and the U.S. Department of Agriculture. The Office of Scientific and Engineering Personnel (OSEP) thanks these agencies for their support. The interest, aid, and counsel of Mary Golladay (NSF), the project officer for the agencies, are appreciated. In addition, Felix Lindsay of the National Science Foundation, Charles Sherman of the National Institutes of Health, Jeffrey Thomas of the National Endowment for the Humanities, Samuel Peng and Susan Hill of the U.S. Department of Education, and K. Jane Coulter and Marge Stanton of the U.S. Department of Agriculture have provided constructive advice on the design and analysis of the survey, a contribution that increases its relevance to national policy issues. We also express our thanks to the graduate deans in the doctorate-granting institutions for their continuing interest in and assistance to this project.

The Survey of Earned Doctorates is conducted under the administrative supervision of Susan Coyle. Yupin Bae was responsible for the development of the summary statistics as well as the production of most graphics. Special appreciation goes to Eileen Milner, who supervised the coding and editing of the data; to George Boyce, manager of OSEP's Data Processing Section; to Joseph Finan and Maren Herman, who were responsible for the computer programming and processing; to Dorothy Cooper, project assistant, who was responsible for the production of the manuscript; and to Cynthia Woods for her expertise in desk top publishing. Thanks also go to Linda S. Dix, OSEP's reports officer, who edited the draft and final manuscripts.

OSEP is concerned with those activities of the National Research Council that contribute to the more effective development and utilization of the nation's scholars and research personnel. Its programs seek to strengthen higher education and to develop better understanding of the education process. It is hoped that reporting of the present data to educational institutions, government agencies, and professional societies will facilitate planning in higher education. Suggestions for improvement of the content or format of the report, other comments, and questions are welcome.

CONTENTS

INTRODUCTION 1

TRENDS IN THE NUMBER OF DOCTORATES 2
  Citizenship Status 5
  Male and Female Doctorate Recipients 8
  Racial and Ethnic Status 10
  Sources of Support in Graduate School 13
  Median Time-to-Degree 14
  Status and Type of Postgraduation Plans 16
  Postdoctoral Study Decisions 16

FIELD DIFFERENCES 21
  Demographic Trends 21
  Sources of Support in Graduate School 27
  Median Time-to-Degree 29
  Trends in Postgraduation Plans 33
  Summary 37

APPENDIXES 39

  A The Five Basic Tables 40
    1 Number of Doctorate Recipients, by Sex and Subfield, 1986 42
    1A Number of Doctorate Recipients, by Citizenship, Racial/Ethnic Group, and Subfield, 1986 44
    2 Statistical Profile of Doctorate Recipients, by Field of Doctorate, 1986 48
    3 Sources of Support in Graduate School of Doctorate Recipients, by Sex and Summary Field, 1986 54
    4 State of Doctoral Institution of Doctorate Recipients, by Sex and Summary Field, 1986 55
    5 Statistical Profile of Doctorate Recipients, by Racial/Ethnic Group and Citizenship Status, 1986 56

  B Number of Doctorate Recipients, by Fine Field, 1976-1986 59

  C Demographic Trends of Doctorate Recipients in 30 Selected Fields, 1958-1986 64

  D Trends in Postgraduation Plans of Doctorate Recipients in 30 Selected Fields, 1958-1986 72

LIST OF TABLES

A Doctorates Awarded by U.S. Universities, 1960-1986 2
B Doctorates Awarded by U.S. Universities, by Broad Field and Sex, 1977-1986 4
C Percentage Distribution of Doctorate Recipients, by Citizenship and Broad Field, 1962-1986 6
D Percentage of Doctorate Recipients with Employment Commitments in the U.S., by Citizenship and Broad Field, 1977 and 1986 7
E Doctorate Recipients by Sex, Race, and Citizenship, 1977-1986 11
F Race/Ethnicity, Sex, and Field of Degree of 1986 Doctorate Recipients (U.S. Citizens) 12
G Primary Sources of Support in Graduate School, by Field, 1977 and 1986 13
H Type and Status of Postgraduation Plans, by Broad Field, 1976-1986 17
I Reasons for Taking Postdoctoral Study, by Field, 1986 19
J Reasons for Deciding Against Postdoctoral Study, by Field, 1986 20
K Primary Sources of Support of Doctorate Recipients in 30 Selected Fields, 1977 and 1986 28
L Median Total Years to Degree of Doctorate Recipients in 30 Selected Fields, 1958-1986 30
M Median Registered Years to Degree of Doctorate Recipients in 30 Selected Fields, 1958-1986 32

LIST OF FIGURES

1 Doctorates awarded by U.S. universities, 1960-1986, **3**
2 Trends in the number of U.S. and permanent-resident Ph.D.s and in the comparable U.S. population, 1962-1986, **7**
3 Doctorates awarded by U.S. universities, by broad field and sex, 1976-1986, **9**
4 Median total years to degree, by broad field, 1976-1986, **15**
5 Median registered years to degree, by broad field, 1976-1986, **15**
6 Gender distribution in female-dominated fields, 1976-1986, **25**
7 Gender distribution in female-underrepresented fields, 1976-1986, **26**
8 Median years to degree, all fields combined, 1958-1986, **29**
9 Status of postgraduation plans of doctorate recipients, 1958-1986, **33**
10 Type of postgraduation plans of doctorate recipients, 1958-1986, **34**

INTRODUCTION

Doctorate recipients from U.S. universities numbered 31,770 in 1986, an increase of 1.8 percent from the previous year. While the 1986 cohort was the largest since 1976, the number still falls decidedly short of the peak reached in 1973, when 33,755 research doctorates were earned. Moreover, the U.S.-citizen component of the class of 1986 continued a decline that began in the 1970s.

Selected statistics from the 1986 Survey of Earned Doctorates are highlighted in this report, as are trend data on Ph.D.s from the comprehensive Doctorate Records File (DRF). Frequently requested data--trends in broad field data and the demographic characteristics of Ph.D.s--are presented here. Also featured are data on sources of support in graduate school, time-to-degree completion, and postgraduation plans of these new Ph.D.s.

The report's special section focuses on within-field differences; the seven broad fields are broken out into 30 cluster fields to examine once again recipients' demographic variables, sources of support, time-to-degree, and postgraduation plans. Reporting only at the broad field level may miss interesting comparisons that emerge from a finer level of disaggregation; at the worst, it may overlook countertrends. As an example of the former, teasing out the data uncovered similarities among doctorates in the clusters of chemistry, biochemistry, and chemical engineering--similarities that may have gone unnoticed had the discussion been generalized to broad fields of physical sciences, life sciences, and engineering. Additionally, the traditional clustering of health sciences within life sciences obscures dissimilarities between health scientists and other natural scientists, and the clustering of economics within social sciences obscures the strong similarities between economists and natural scientists. Finally, reporting only the recent increase in the broad field of physical sciences would have eclipsed the rather sizeable decrease occurring in the mathematics cluster.

Last year's special section focused on women and minority U.S. doctorate recipients. There have been few changes in their distributions from 1985 to 1986. The largest increase was in the proportion of women among American doctorates; they rose from 39.1 to 40.9 percent in 1986. The percentage of U.S. black recipients showed the greatest decline, from 4.0 to 3.6 percent, the smallest percentage of U.S. blacks since 1974.

Other recent reports highlighted types of U.S. baccalaureate sources of Ph.D.s, measured by absolute numbers of doctorates and by numbers relative to the size of the B.A. cohort (1984), and employment plans and citizenship characteristics of new Ph.D.s entering the U.S. labor force (1983).

TRENDS IN THE NUMBER OF DOCTORATES

The 31,770 research doctorates earned in 1986 topped the number earned in any other year of the 1977-1986 decade. In that 10-year period, the number of degrees was remarkably stable year to year, and the 1986 figure is but 1.8 percent higher than in 1985. Nonetheless, this small change represents the widest variance from the decade's average of 31,277 Ph.D.s per annum.

When the frame of reference is enlarged to look at trends since 1960, the stability of the past decade is even more remarkable (see Table A, below, and Figure 1, page 3). In the late 1950s, the number of doctorate recipients grew annually by 5 percent. In the 1960s, the rate of growth in doctorate degrees doubled, then tripled. In the early 1970s, the growth rate slowed, reached the 1973 peak, then reversed direction in 1974 and finally stabilized in 1977.

When the total number of degrees is disaggregated into seven broad fields, the decade's pattern of stability virtually disappears (see Table B, page 4). Doctorates in the natural sciences and engineering increased, with engineering in particular experiencing rapid growth. Doctorates in humanities declined the most, falling 36 percent since 1973. The numbers of doctorates in education and in social sciences also dropped: both fields had their peaks in 1976, and in 1986 they had fewer recipients by 14.5 percent and 6 percent, respectively.

TABLE A: Doctorates Awarded by U.S. Universities, 1960-1986

Year	Number	Year	Number	Year	Number
1960	9,733	1969	25,743	1978	30,875
1961	10,413	1970	29,498	1979	31,237
1962	11,500	1971	31,867	1980	31,017
1963	12,728	1972	33,041	1981	31,353
1964	14,325	1973	33,755	1982	31,096
1965	16,340	1974	33,047	1983	31,216
1966	17,949	1975	32,951	1984	31,277
1967	20,403	1976	32,946	1985	31,211
1968	22,936	1977	31,716	1986	31,770

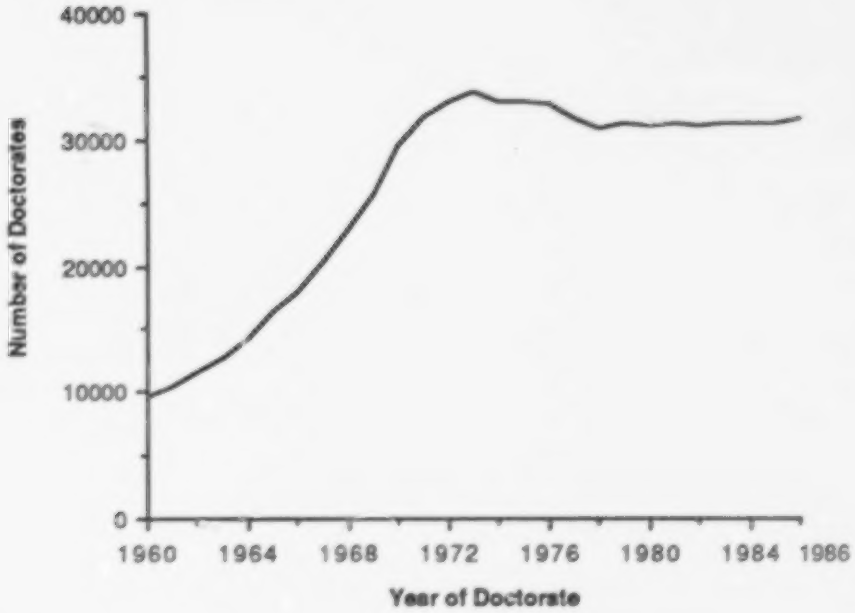

FIGURE 1 Doctorates awarded by U.S. universities, 1960-1986.

The relevance of these numbers must be viewed in the context of two factors. The first is the existing field size. For example, the size of the 1986 cohort of physicists/astronomers (n=1,187) was nearly equal to the cohort of agricultural scientists (n=1,157). However, the number of new physics/astronomy Ph.D.s was lower relative to their existing pool (estimated at 23,852) than the number of new agriculturalists relative to their pool (estimated at 15,666).[1] If the age distributions of these fields are roughly similar this suggests that the number of new Ph.D.s required to replace experienced doctorates who are or will be retiring will be larger in the former field than in the latter.

The relevance of these numbers must also be viewed in terms of whether the field is growing or declining. Other things equal, a smaller number of new Ph.D.s will be required in fields experiencing decline than in fields requiring growth. Little research has evaluated replacement requirements by field, and such research is strongly needed. To shed light on these requirements, it is suggested that Ph.D. supply data from the Survey of Earned Doctorates (SED) be used in conjunction with Ph.D. employment data gathered by the Survey of Doctorate Recipients (SDR). Also conducted by the National Research Council, the SDR is a biennial follow-up survey which samples approximately one out of eight doctorate recipients from the SED in the fields of science, engineering, and humanities. Estimates of attrition as well as the number of new job openings can be derived from the SDR.[2]

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[1] Doctoral labor force estimated by the National Research Council, Office of Scientific and Engineering Personnel, 1985 Survey of Doctorate Recipients.

[2] See, e.g., Peter D. Syverson and Lorna E. Forster, "New Ph.D.s and the Academic Labor Market," paper presented at the annual meeting of the Council of Graduate Schools, December 7, 1984.

TABLE B: Doctorates Awarded by U.S. Universities, by Broad Field and Sex, 1977-1986

Field	Year of Doctorate									
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total All Fields	31,716	30,875	31,237	31,017	31,353	31,096	31,216	31,277	31,211	31,770
Men	23,858	22,553	22,300	21,610	21,461	21,005	20,718	20,598	20,500	20,526
Women	7,858	8,322	8,937	9,407	9,892	10,091	10,498	10,679	10,711	11,244
Physical Sciences*	4,379	4,193	4,299	4,111	4,170	4,291	4,426	4,452	4,532	4,808
Men	3,949	3,754	3,803	3,609	3,667	3,715	3,809	3,795	3,818	4,033
Women	430	439	496	502	503	576	617	657	714	775
Engineering	2,643	2,423	2,490	2,479	2,528	2,646	2,781	2,913	3,167	3,376
Men	2,569	2,370	2,428	2,389	2,429	2,522	2,657	2,762	2,969	3,151
Women	74	53	62	90	99	124	124	151	198	225
Life Sciences	4,920	5,040	5,223	5,461	5,611	5,705	5,545	5,749	5,759	5,720
Men	3,892	3,881	3,952	4,047	4,076	4,070	3,827	3,959	3,895	3,777
Women	1,028	1,159	1,271	1,414	1,535	1,635	1,718	1,790	1,864	1,943
Social Sciences	6,073	6,039	5,961	5,856	6,142	5,836	6,058	5,903	5,721	5,841
Men	4,348	4,178	3,969	3,811	3,945	3,679	3,676	3,489	3,365	3,362
Women	1,725	1,861	1,992	2,045	2,197	2,157	2,382	2,414	2,356	2,479
Humanities	4,562	4,231	4,139	3,867	3,748	3,558	3,496	3,531	3,428	3,461
Men	2,903	2,635	2,547	2,335	2,200	2,049	1,965	1,942	1,939	1,896
Women	1,659	1,596	1,592	1,532	1,548	1,509	1,531	1,589	1,489	1,565
Education	7,455	7,194	7,385	7,587	7,497	7,252	7,163	6,796	6,722	6,602
Men	4,870	4,339	4,277	4,204	3,957	3,712	3,552	3,330	3,238	3,012
Women	2,585	2,855	3,108	3,383	3,540	3,540	3,611	3,466	3,484	3,590
Professional Fields	1,660	1,741	1,717	1,634	1,622	1,784	1,725	1,918	1,857	1,936
Men	1,311	1,389	1,309	1,201	1,160	1,238	1,219	1,314	1,260	1,277
Women	349	352	408	433	462	546	506	604	597	659

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* Includes mathematics and computer sciences.

Citizenship Status

In the last 25 years, the citizenship composition of the doctorate cohort changed significantly (see Table C, page 6). The most dramatic changes were in the proportions of U.S. citizens and temporary visa-holders: U.S. citizens declined from 85.6 percent in 1962 to 72.3 percent in 1986, whereas temporary residents increased from 10.8 to 16.6 percent of the doctorates. (The proportion of permanent residents increased slightly from 2.4 to 4.5 percent. The remaining 6.6 percent of doctorates did not report their citizenship status.) Most of the shift occurred in the last 10 years. While the number of temporary visa-holders increased in all fields, the growth was most pronounced among engineers and physical scientists.

The temporary status of doctorate recipients may be an issue for long-range planning because relatively fewer of these recipients remain in the U.S. after completion of their degrees and because their particular status is at times dependent on the state of this nation's international relations and immigration policies. The percentage of temporary residents who reported on the Survey of Earned Doctorates (SED) that they intended to remain in the U.S. following graduation was much lower than that of U.S. citizens and permanent residents (35.6 percent versus 92.4 and 74.5 percent). However, because these figures were derived from that component of the cohort who reported definite postgraduation plans (about two-thirds of the recipients), data on the final third would be helpful to illuminate whether temporary visa-holders leave the U.S. following receipt of the doctorate degree.

Additional information on the location of postdoctoral activity of the other third of recipients is available through the biennial Survey of Doctorate Recipients (SDR), whose most recent data are from 1985. The third of 1983 SED respondents who did not report postgraduation location were matched against the 1985 SDR. (A two-year gap was chosen to allow for expiration of students' temporary visas.)

The SDR data on recipients who did not report location on the SED survey show the following with a U.S. location: 97.8 percent of U.S. citizens, 96.5 percent of permanent visa-holders, and 51.3 percent of temporary visa-holders. Along with data from Table D (page 7) and Appendix A, Table 5 (pages 56-57), the picture emerges that between one-half to two-thirds of temporary visa-holders do not remain in the U.S. following the receipt of the degree.

Thus, the growth trends noted above in engineering and physical sciences may change to flat trends. To illustrate, in 1977 there were 4,379 Ph.D.s earned in the physical sciences; by 1986 the number had grown to 4,808. Of the 1977 group, 1,554 U.S. and permanent-resident physical scientists reported that they had definite employment commitments in the U.S. They were joined by 50 temporary visa-holders, bringing the total to 1,604. In 1986, the comparable numbers were 1,395 U.S. citizens and permanent residents and 180 temporary visa-holders, a total of 1,575.

The decline in the number of U.S. and permanent residents getting Ph.D.s does not seem to be tied to demographic trends. On the contrary, in the last 25 years changes in the size of the relevant population pool for doctorate recipients differed considerably from changes in the numbers of new Ph.D.s. Because the median age at Ph.D. for U.S. and permanent residents was 33.8 years in 1986, a relevant population pool is the group of 25 -to 34-year-olds with 16 or more years of education, whose usual place of residence is the United States (this pool includes permanent visa-holders but not temporary ones).

Figure 2, page 7, displays the growth trend of that population pool, indexed to 1962 figures, and compares the similarly indexed growth in U.S. and permanent-resident Ph.D.s. Growth in the Ph.D. cohort ran well ahead of the population curve prior to 1978, but it has since declined. The implication is that to keep the supply of new doctorates at a steady or increased rate, a greater proportion of college graduates will have to be encouraged into graduate school, perhaps with underrepresented groups being targeted or the pool of temporary visa-holders will have to be encouraged to remain in the U.S.

TABLE C: Percentage Distribution of Doctorate Recipients, by Citizenship and Broad Field, 1962-1986*

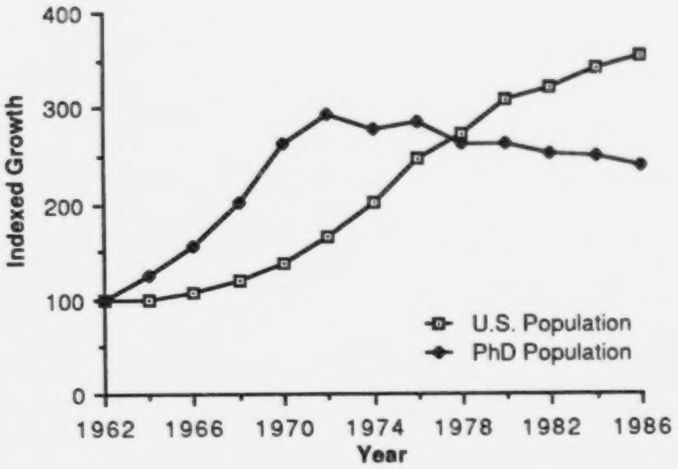
	Year of Doctorate						
Field	1962	1966	1970	1974	1978	1982	1986
Total, All Fields							
U.S. Citizens	85.6	83.4	84.5	79.7	81.9	78.4	72.3
Permanent Visas	2.4	3.5	5.3	5.5	4.4	3.9	4.5
Temporary Visas	10.8	10.6	8.7	10.2	11.1	13.5	16.6
Physical Sciences							
U.S. Citizens	84.8	82.0	82.2	73.8	76.3	72.7	62.5
Permanent Visas	2.2	3.4	6.3	7.5	6.1	4.7	5.0
Temporary Visas	11.9	11.9	10.1	14.8	15.4	19.5	26.2
Engineering							
U.S. Citizens	76.5	73.4	73.2	55.7	52.0	44.2	40.8
Permanent Visas	4.9	6.3	12.5	16.4	13.4	11.2	10.2
Temporary Visas	17.9	16.7	13.7	22.4	31.7	38.9	40.6
Life Sciences							
U.S. Citizens	79.8	77.3	80.2	74.3	79.9	80.8	75.9
Permanent Visas	2.7	3.3	5.2	6.4	4.3	3.2	3.6
Temporary Visas	16.7	18.0	13.9	14.7	13.3	13.1	15.2
Social Sciences							
U.S. Citizens	85.4	83.4	85.1	82.7	84.8	82.2	77.9
Permanent Visas	2.1	3.7	4.9	3.6	3.5	3.4	3.8
Temporary Visas	10.5	10.2	8.7	8.8	8.1	9.2	11.5
Humanities							
U.S. Citizens	90.7	88.3	89.6	87.4	89.3	84.9	78.8
Permanent Visas	2.4	4.3	4.7	4.3	3.3	3.9	4.4
Temporary Visas	4.6	4.5	3.8	4.2	4.7	6.4	9.3
Education							
U.S. Citizens	94.5	94.6	94.6	90.6	90.3	86.6	84.7
Permanent Visas	0.8	1.0	1.2	1.4	1.8	2.0	2.5
Temporary Visas	4.3	3.5	3.4	4.2	5.7	7.9	7.1
Professional and Other							
U.S. Citizens	82.5	81.9	78.2	80.3	80.0	76.5	70.8
Permanent Visas	2.2	3.9	5.5	4.8	3.9	3.7	4.8
Temporary Visas	13.3	9.6	12.7	9.5	13.7	14.0	15.6

*Details do not add to 100 percent where citizenship is unknown.

TABLE D: Percentage of Doctorate Recipients with Employment Commitments in the U.S., by Citizenship and Broad Field, 1977 and 1986*

Field	U.S. Citizen 1977	U.S. Citizen 1986	Permanent Visa 1977	Permanent Visa 1986	Temporary Visa 1977	Temporary Visa 1986
Total, All Fields	94.9	92.4	85.4	74.5	23.7	35.6
Physical Sciences	97.1	96.0	84.0	80.9	25.5	49.6
Engineering	96.3	95.3	94.1	84.3	48.6	53.7
Life Sciences	94.1	93.9	75.4	56.1	9.2	13.1
Social Sciences	94.3	92.6	85.1	74.7	21.6	28.2
Humanities	92.7	89.6	87.3	74.2	21.1	27.1
Education	95.2	90.8	62.2	52.8	8.1	8.2
Professional Fields	95.5	92.8	85.4	80.0	21.4	48.4

* Percentage based on total reporting definite postgraduation plans (17,215 doctorate recipients in 1977 and 15,981 in 1986).



NOTES: Index year = 1962. Comparable U.S. population = 25- to 34-year-olds having 16 or more years of education.
SOURCES: National Research Council and U.S. Department of Commerce, Bureau of the Census.

FIGURE 2 Trends in the number of U.S. and permanent-resident Ph.D.s and in the comparable U.S. population, 1962-1986.

Male and Female Doctorate Recipients

In addition to changes in citizenship composition, the trends in degree production among men and women also diverged during the 1977-1986 period (see Table B, page 4, and Figure 3, page 9). In many fields, there was a reduction in the number of men earning Ph.D.s and a corresponding gain in the number of women. By 1986, women earned 35.4 percent of the doctorate degrees from U.S. universities. Despite their advance, however, women continued to be underrepresented in the natural sciences and engineering.

While U.S. women have been entering these fields in greater numbers, their presence has been overshadowed by the concurrent growth in the number of foreign recipients. These cohorts of non-U.S. citizens, especially temporary visa-holders, are more predominantly male than their American counterparts, and they are tending to enter the science and engineering pool at a faster rate than U.S. women. A Ph.D. "gap" was created in the 1970s when the number of American male recipients declined; the gap was partially filled by American women, but to a greater extent it was filled by foreign citizens. Moreover, the gap-filling role played by these two groups was not played uniformly across these fields. One researcher has found a large, negative correlation ($r = -.79$) between the fraction of women and the fraction of foreign citizens in engineering and the three broad fields of science.[3] U.S. women were closer to parity with U.S. men--at 40.9 percent--than were all women vis-a-vis all men. This finding held true in all of the seven broad fields; for example, among all engineers women were 6.7 percent, but among U.S. engineers women were 10.1 percent.

Engineering was the single field in which both men and women increased their numbers over the decade; at the same time, women enhanced their proportion of engineering Ph.D.s from 2.8 percent in 1977 to 6.7 percent in 1986. Humanities was the single field in which the number of doctorates earned by both sexes declined. The reduction was smaller among women, however, and their downward trend was irregular: in fact, there were more women doctorates in humanities in 1986 than in the previous year. As a result of the sexes' differing rates of decline, the percentage of women humanists increased from 36.4 percent in 1977 to 45.2 percent in 1986.

Education was the only one of the seven broad fields in which the number of women exceeded the number of men. (There were also more women than men in some non-major fields, to be discussed in the special section below.) In 1986, women earned 54.6 percent of the education doctorates. Nonetheless, the number of women was less than the peak reached in 1983, when women became the majority of these degree earners. In terms of types of education degrees, women received slightly more Ph.D.s than men (49.5 percent versus 47.4 percent) and slightly fewer Ed.D.s (47 percent versus 48.4 percent).

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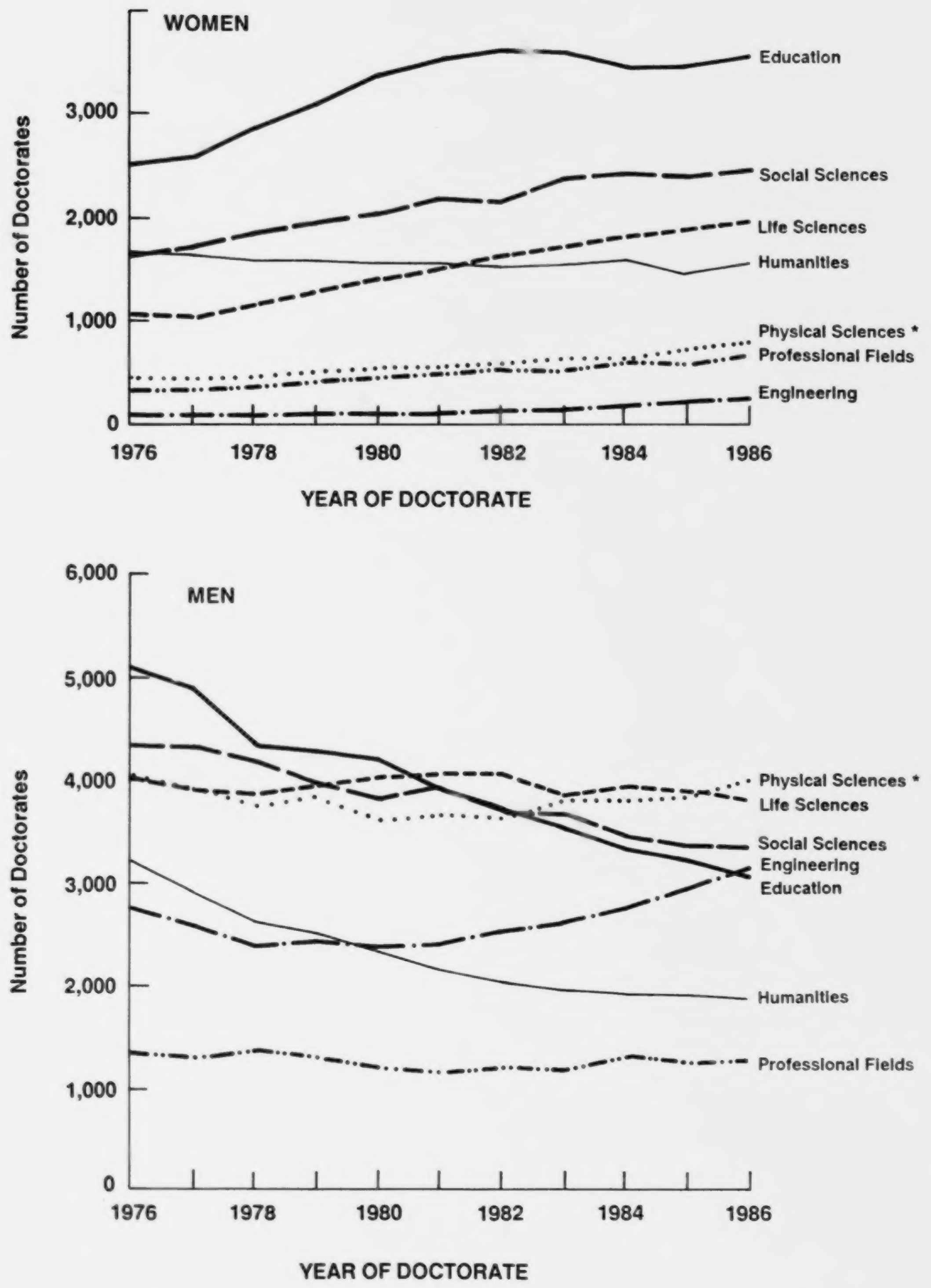
[3] Robert McGinnis, "Interactions Between Labor-Market Adjustments and the Quality of Performance in Engineering: A Sociological Perspective," Ithaca, N.Y.: Cornell University, unpublished paper, 1987.



*Includes mathematics and computer sciences.

FIGURE 3 Doctorates awarded by U.S. universities, by broad field and sex, 1976-1986.

Racial and Ethnic Status

The racial composition of new Ph.D. cohorts also changed between 1977 and 1986. Table E (page 11) displays the number of doctorate recipients by gender, racial/ethnic group, and citizenship status, 1977-1986. The smallest group getting Ph.D.s has consistently been American Indians; the largest has consistently been whites. In between, the order from low to high was: Hispanic, black, Asian. While the sequence of these groups has remained the same, their sizes have changed. Hispanics and, especially, Asians have increased their shares of doctorates earned; blacks and whites have decreased their shares. The groups also display differences in their field distributions, and Table F (page 12) shows those differences for U.S.-citizen doctorate recipients in 1986.

The decline in numbers of black and white Ph.D.s occurred primarily within the U.S.-citizen stratum. The most significant decline was among U.S. blacks. The number of black American doctorates dropped from 1,116 to 820, a reduction of 26.5 percent, which was not evenly distributed between the sexes. The number of Ph.D.s awarded to U.S. black males decreased by more than half, whereas the number awarded to U.S. black women rose 15.5 percent. As evidenced in Table F, American blacks of both sexes tended to cluster in the field of education.

In addition, the number of white American doctorates declined. Their 11 percent reduction was also a result of losses among male recipients, which were only partially offset by increases on the part of white women.

On the other hand, important gains were made by other groups. Chief among them were Asians, especially those on temporary visas. In 1977, Asians earned 6.9 percent of the doctorates, and by 1986 they earned 12.8 percent. Also, by 1986 Asians had become the largest racial group (54.7 percent) of temporary-resident doctorates; whites had been the biggest group in 1977. In addition, Asian Americans also increased their participant share, from 1.4 percent of U.S.-citizen doctorates in 1977 to 2.3 percent in 1986. Table F shows that Asian Americans were largely concentrated in the life sciences.

The number of Hispanic Ph.D.s also increased in every citizenship stratum, especially among the temporary-visa group. Hispanics earned 2.4 percent of the doctorates in 1977 and 3.6 percent in 1986. Much of the growth among the U.S. Hispanic group was attributable to a rise in the number of women doctorates: by 1986, U.S. Hispanic women were at near parity with their male counterparts (47.3 percent). Like U.S. blacks, U.S. Hispanics tended to cluster in the education field.

Finally, the numbers and proportions of American Indians went up over the decade, peaking at 100 in 1986 (virtually all are U.S. citizens, although occasionally cohorts will include Canadian and Latin American Indians). Because their numbers have always been quite low, even small variations can change the picture quite dramatically. For example, in 1985, 58.1 percent of American Indian recipients were women, but in 1986 the balance shifted, and 59 percent were men. Despite the irregular trend, it does appear that the number of American Indians receiving doctorates is gradually increasing (0.2 percent in 1977; 0.3 percent in 1986).

TABLE E: Doctorate Recipients, by Sex, Race, and Citizenship, 1977–1986

	Year of Doctorate									
Race/Ethnicity	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
MEN										
American Indian										
U.S.	43	50	56	46	56	44	50	53	39	58
Permanent Visas*	–	–	–	–	–	–	1	–	–	–
Temporary Visas*	4	1	3	–	–	–	–	–	–	1
Asian										
U.S.	251	287	311	313	315	281	312	338	329	347
Permanent Visas	488	531	564	513	499	444	431	389	437	412
Temporary Visas	955	1,114	1,253	1,282	1,341	1,567	1,731	1,982	2,137	2,252
Black										
U.S.	684	584	551	499	499	483	412	427	379	321
Permanent Visas	70	65	52	63	80	81	73	81	117	106
Temporary Visas	236	252	288	305	339	340	339	382	354	275
Hispanic										
U.S.	310	317	308	256	275	344	288	313	300	299
Permanent Visas	36	52	52	48	47	52	45	47	50	71
Temporary Visas	210	251	310	280	321	247	288	252	294	288
White										
U.S.	17,011	15,573	15,261	14,848	14,458	13,984	13,599	13,155	12,778	12,257
Permanent Visas	446	379	319	326	331	309	381	350	367	409
Temporary Visas	1,252	1,197	1,068	1,129	1,225	1,242	1,287	1,223	1,272	1,214
WOMEN										
American Indian										
U.S.	22	10	25	29	29	33	30	20	56	41
Permanent Visas*	1	–	–	–	–	–	–	–	–	–
Temporary Visas*	–	–	–	–	–	–	–	–	–	–
Asian										
U.S.	88	103	117	145	150	171	180	174	187	180
Permanent Visas	83	111	110	131	109	108	120	118	116	111
Temporary Visas	163	197	210	190	223	262	275	313	389	387
Black										
U.S.	432	449	505	533	514	564	509	526	533	499
Permanent Visas	8	8	6	11	17	15	10	21	14	20
Temporary Visas	13	18	32	26	33	33	24	37	41	38
Hispanic										
U.S.	113	156	154	156	189	191	250	222	261	268
Permanent Visas	15	13	25	25	15	27	24	24	23	36
Temporary Visas	22	38	38	48	68	47	54	48	67	83
White										
U.S.	6,054	6,238	6,659	7,145	7,521	7,689	8,074	8,168	7,926	8,281
Permanent Visas	143	152	157	142	159	154	163	163	167	183
Temporary Visas	196	175	195	201	207	216	252	267	295	290

* In most cases, non–U.S. American Indians are citizens of Canada or of Latin American countries.

TABLE F: Race/Ethnicity, Sex, and Field of Degree of 1986 Doctorate Recipients (U.S. Citizens)

Race/Ethnicity	Field of Doctorate							
	Total Fields	Physical Sciences	Engineering	Life Sciences	Social Sciences	Humanities	Education	Professional and Other
U.S. Citizens								
Total	22,984	3,003	1,379	4,342	4,548	2,728	5,595	1,389
Men	13,583	2,486	1,240	2,733	2,414	1,477	2,403	830
Women	9,401	517	139	1,609	2,134	1,251	3,192	559
American Indian								
Total	99	8	6	23	20	7	26	9
Men	58	4	5	11	12	6	16	4
Women	41	4	1	12	8	1	10	5
Asian								
Total	527	107	80	152	69	30	58	31
Men	347	84	74	92	40	10	25	22
Women	180	23	6	60	29	20	33	9
Black								
Total	820	25	14	64	163	70	421	63
Men	321	18	10	28	70	28	141	26
Women	499	7	4	36	93	42	280	37
Hispanic								
Total	567	53	25	72	130	76	188	23
Men	299	41	22	39	75	38	68	16
Women	268	12	3	33	55	38	120	7
White								
Total	20,538	2,714	1,224	3,958	4,080	2,496	4,820	1,246
Men	12,257	2,253	1,102	2,507	2,164	1,366	2,114	751
Women	8,281	461	122	1,451	1,916	1,130	2,706	495

Sources of Support in Graduate School

Since 1977, item 17 of the Survey of Earned Doctorates has asked recipients to designate their primary sources of support from a list of 26 sources categorized along four main lines: personal, university-related, federal, and "other." Within these categories, there are different mechanisms. For example, personal or self-support may come from one's own earnings, spouse's earnings, family contributions, or loans. University support comes usually through research assistantships or teaching assistantships but may also be fellowships or work-study. Federal support comes through fellowships or traineeships from various agencies, such as NSF, NIH, and the Department of Education. In the "other" category are a variety of sources, such as Ford Foundation fellowships and business support. This last category accounts for the smallest proportion of the total primary financial support, about 6 percent.

Doctorate recipients evidenced different patterns of financial support among the seven broad fields. In addition, the patterns shifted somewhat over time, the most significant change being an erosion of federal support (see Table G). A decade ago, 16.1 percent of new recipients reported that the federal government was their primary supporter. In the 1980s, however, the government began to shrink its role in supporting doctorate recipients, and almost all the agencies, except NSF and the Defense Department, pulled back on the number of students they supported. Thus, by 1986, only 7.2 percent of the recipients reported the federal government as their major support source. As a consequence, the number of recipients relying on either self-support or university-related support increased, and field differences widened.

TABLE G: Primary Sources of Support in Graduate School, by Field, 1977 and 1986*

	Primary Sources of Support							
	Personal		University		Federal		Other	
Field	1977	1986	1977	1986	1977	1986	1977	1986
Total All Fields	36.1	42.1	41.9	44.8	16.1	7.2	5.8	6.0
Physical Sciences	13.0	12.5	69.4	77.7	12.6	5.0	5.0	4.7
Engineering	17.8	16.4	59.6	67.7	12.4	5.6	10.2	10.3
Life Sciences	17.3	24.2	46.9	49.7	30.0	19.3	5.8	6.7
Social Sciences	35.8	49.7	35.8	38.4	22.6	6.7	5.7	5.3
Humanities	39.7	48.6	42.9	43.8	11.7	3.2	5.6	4.4
Education	66.2	79.0	20.6	13.3	8.5	2.4	4.7	5.2
Professional Fields and Other	48.3	52.5	33.1	37.2	11.7	3.6	6.9	6.6

* Percentage based on total reporting primary source of support (17,195 doctorate recipients in 1977 and 26,232 in 1986).

In 1977, a majority of doctorate recipients in physical sciences, engineering, and life sciences--and a plurality in the humanities--reported the university as their major support source. In addition, 17.4 percent of these Ph.D.s reported federal funding as their major support. However, as federal support began to dry up, the pattern changed. Table G shows that by 1986, a larger share of physical scientists and engineers relied on university support, but in contrast, a larger share of life scientists and humanists reported personal sources of support. Moreover, the plurality of humanists, no longer supported by the university, instead relied on self-support.

The decline in federal support also occurred among social scientists (22.6 percent reported federal funding in 1977, versus 6.7 percent in 1986). In the earlier year, social scientists were evenly split between their reliance on self-support and university-related support; each source was reported by 35.8 percent of new doctorates. By 1986, the loss in federal support was countered by a 13.9-point growth in the self-supporting share, while the share relying on university support rose by only 2.6 points.

In the remaining broad fields of education and professional fields, recipients reported personal sources by a wide margin in 1977 and by a still wider margin in 1986. The 9.1 percent that had primary reliance on federal support in 1977 had dwindled to 2.7 percent by 1986. For education doctorates, the decline in federal support coincided with a decline in the rate of university-related sources, which resulted in a greater share depending on self-support (from 66.2 percent in 1977 to 79.0 percent in 1986).

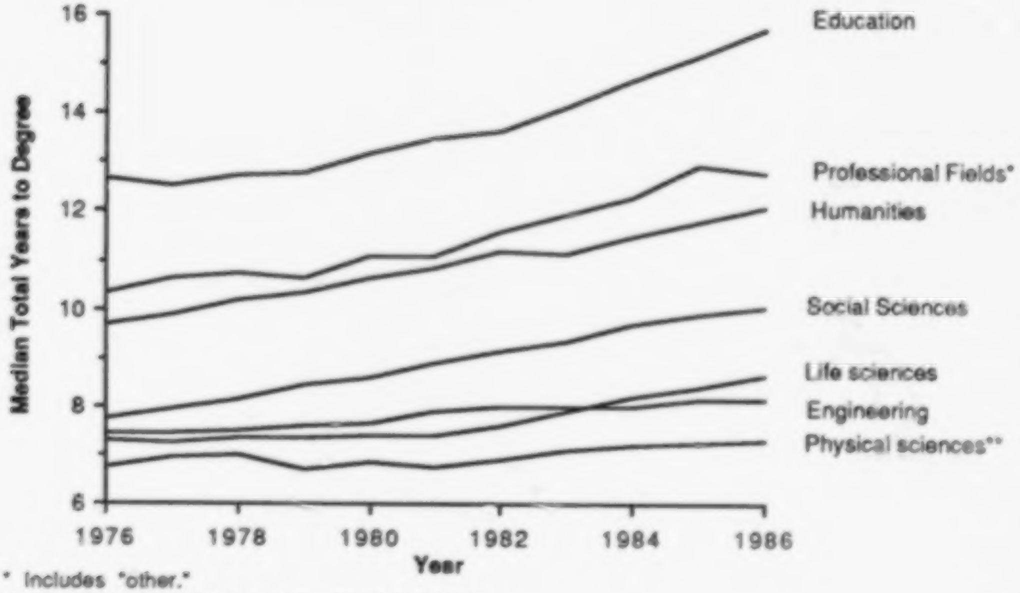
Median Time-to-Degree

The time it takes to earn a doctorate degree, measured from the date of the first baccalaureate, steadily increased over the 1976-1986 period. At the earlier year, the median total time-to-degree was 8.6 years. In 1986, it was 10.4 years.

Additional variation was observed when the data were disaggregated by field. For example, recipients in the natural sciences and engineering completed their degrees more quickly than the doctorates in other fields, with physical scientists taking the shortest total completion time--7.3 years in 1986. The recipients with the longest total time-to-degree were educators--a median 15.7 years in 1986, more than double the completion time for physical scientists. Figure 4, page 15, depicts the rising trends, the hierarchy of fields, and the differences across fields.

Alternatively, time-lapse can be measured in terms of years registered for the Ph.D. (see Figure 5, page 15). Like total time, registered time-lapse also increased over the 1976-1986 period, but its increase was much less--from 6.0 to 6.8 years overall. In parallel fashion, registered time increased in each of the seven broad fields. However, the hierarchy of low to high was different from that for total time. (The reader should be advised to note the differences in scaling on the y-axes of Figures 4 and 5 to avoid misleading comparisons of slopes.)

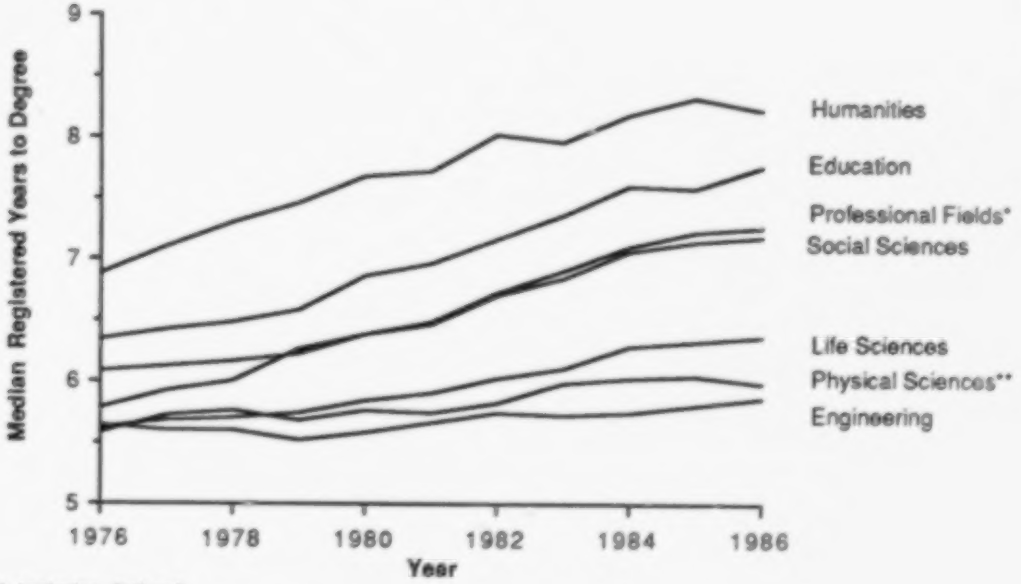
Recipients with the shortest registered completion time were engineers--5.9 years in 1986. Recipients with the longest registered time were humanists--8.2 years in 1986. The difference between total time and registered time was perhaps most pronounced in the field of education. For educators, the median total time-to-degree in 1986 was 15.7 years, but the median registered time was only half that--7.8 years. This difference reflects the practice of many education doctorates to work for a number of years after earning a baccalaureate and before beginning their doctorate program.



* Includes "other."

** Includes mathematics and computer sciences.

FIGURE 4 Median total years to degree, by broad field, 1976-1986.



* Includes "other."

** Includes mathematics and computer sciences.

FIGURE 5 Median registered years to degree, by broad field, 1976-1986.

Status and Type of Postgraduation Plans

As discussed above, the Survey of Earned Doctorates is administered at about the time that recipients complete all of their degree requirements. It is at that time, then, that the answer to item 19 applies--i.e., "What is the status of your current postgraduate plans?" The new Ph.D.s can designate that they are returning to predoctorate employment or have made another commitment; these responses are categorized as "definite." Conversely, recipients may specify that they are negotiating with an organization(s), are seeking a position but have no specific prospects, or "other"; these selections are characterized as "seeking."

The trend in status of plans has been generally stable since 1976 (although the special section, **Field Differences,** takes a longer view and shows marked changes occurring in the late 1960s to early 1970s). As seen in Table H (page 17) 67.6 percent of new doctorates had definite plans in 1976, not markedly different from the 66.3 percent in 1986. Where variation occurred was among fields. The field with the biggest share of recipients with definite plans in 1986 was professional and other (72.4 percent). This figure is lower than in 1976, when 77.0 percent had definite plans. The field with the lowest percentage with definite plans was humanities (57.2 percent). In contrast to the reduction observed for professional degree-earners, the humanists' figure is higher than in 1976, when the parallel percentage was 54.9 percent.

Recipients were also asked to specify whether their postgraduation plans involved employment or study, and here is where a more noticeable change took place. In 1976, 76.7 percent of new Ph.D.s planned to be employed. By 1986, that figure had declined to 69.0 percent. Correspondingly, study plans were reported by 16.6 percent of respondents in 1976 and by 22.0 percent in 1986. (The remaining recipients did not report their plans.)

Again, Table H displays field differences. The highest share of doctorates planning employment after graduation has consistently been in the field of education; in 1986, the figure was 89.0 percent. The greatest percentage planning postdoctoral study was in life sciences; the figure in 1986 was 51.9 percent. Life sciences was also the field in which the greatest shift occurred between employment and study plans. (See the special section for within-field differences and more extended trend data.)

Postdoctoral Study Decisions

While most of the items on the survey questionnaire pertained to objective data, two asked for subjective responses. First, item 21A asked recipients with postdoctoral study plans, "What was the most important reason for taking a postdoctoral appointment?" Second, for recipients who considered further study but who chose employment, item 22D asked, "Why did you decide against the postdoctoral?"

As it turned out, the proportion of recipients taking postdoctorates varied widely from field to field, but the reasons for or against postdoctoral study clustered around certain responses. To begin with, few recipients outside the science and engineering fields--8 percent or less--had postdoctoral study plans, in part because few such opportunities exist in fields where R&D funding is low. For this reason, the tables showing postdoctoral study decisions (Tables I and J, pages 19 and 20) break the science fields out more finely than the other broad fields. The field with the greatest percentage of doctorates with study plans was biosciences, particularly biochemistry (66.1 percent and 78.5 percent, respectively). Men and women were about as likely to have planned postdoctoral study in these fields. The next highest percentages were in chemistry and physics/astronomy, where approximately half of the recipients had study plans.

TABLE H: Type and Status of Postgraduation Plans, by Broad Field, 1976-1986*

Field	Year of Doctorate					
	1976	1978	1980	1982	1984	1986
Total All Fields						
Employment	76.7	74.7	75.6	74.8	72.6	69.0
Study	16.6	18.0	18.4	18.6	20.5	22.0
Definite	67.6	67.0	70.3	68.6	66.1	66.3
Seeking	25.7	25.7	23.8	24.7	27.0	24.7
Physical Sciences						
Employment	55.6	57.0	59.8	60.8	55.8	50.5
Study	38.0	36.8	34.7	33.3	38.6	40.4
Definite	68.6	71.0	74.8	73.7	70.5	68.3
Seeking	25.0	22.8	19.7	20.4	23.9	22.7
Engineering						
Employment	78.9	76.8	80.0	79.6	74.2	69.3
Study	15.5	16.3	13.5	13.0	16.4	19.2
Definite	67.0	69.3	73.7	66.6	62.5	60.8
Seeking	27.3	23.8	19.8	25.9	28.1	27.7
Life Sciences						
Employment	49.2	46.3	44.8	44.9	42.8	40.5
Study	44.3	47.3	50.1	49.8	51.3	51.9
Definite	71.4	71.1	73.4	71.3	68.2	69.7
Seeking	22.1	22.6	21.5	23.4	25.8	22.6
Social Sciences						
Employment	83.3	79.2	81.5	80.1	78.5	75.6
Study	10.4	12.2	12.5	12.3	13.7	14.9
Definite	68.6	64.3	68.0	65.3	62.0	64.6
Seeking	25.2	27.1	26.0	27.2	30.1	25.9
Humanities						
Employment	85.7	84.7	86.1	85.9	85.1	81.5
Study	4.4	5.4	5.6	5.5	5.7	8.0
Definite	54.9	56.0	58.8	60.0	56.2	57.2
Seeking	35.1	34.1	32.9	31.4	34.7	32.3
Education						
Employment	91.9	90.2	91.6	91.0	91.5	89.0
Study	2.5	3.0	2.9	3.2	3.2	3.7
Definite	69.9	66.9	70.4	69.6	69.5	69.2
Seeking	24.5	26.3	24.1	24.6	25.2	23.5
Professional Fields						
Employment	91.6	92.2	92.0	90.8	90.2	87.4
Study	1.8	1.9	3.0	1.6	2.3	2.8
Definite	77.0	78.2	78.9	75.1	74.3	72.4
Seeking	16.5	15.9	16.1	17.3	18.2	17.7

* Details do not add to 100 percent where plans are unknown.

The most typical reason respondents provided for deciding to take a study appointment was to obtain additional research experience in their doctoral field (see Table I). Between 40 and 70 percent of the respondents in every field--including the non-sciences--chose this as the most important reason. For many scientists, the complex nature of research has required the acquisition of specialized skills,[4] so the explanation of wanting additional experience makes sense. In most of the natural sciences, the second most frequently reported reason was the opportunity to work with a particular scientist or research group; this consideration is also relevant to the development of specialized knowledge. Together, these two reasons were cited by 73.3 percent of the doctorate recipients who planned postdoctoral study in 1986.

On the other hand, the second most frequent reason reported by both chemistry and biochemistry Ph.D.s was to switch into a different field of research. (In addition, more than a third of these recipients who had definite employment commitments also switched out of their degree subfield, although most commitments were made within the same broad field.) Finally, for both social scientists and humanists, the second most frequent reason provided for choosing a postdoctorate was that they could not obtain a desired type of employment position. (Earlier discussion on trends in numbers of doctorates noted that the number of recipients had been declining recently in both of these fields; the absence of desirable employment may be a factor in this decline.)

Of the recipients who made employment plans, a fraction reported that they had seriously considered pursuing postdoctoral study but had decided against it (19.7 percent; see Table J). In every field the most frequent reason for deciding against the postdoctorate was that respondents had more attractive employment opportunities (40.6 percent overall). While this consideration seems to contradict the need to obtain more specialized skills, note that it is based on a minority of recipients who said that they had considered undertaking postdoctoral study.

As for the second most frequent reason against an appointment, recipients in two-thirds of the fields stated that no postdoctorals were available; mathematicians, more than any other Ph.Ds, reported such unavailability (37.5 percent). Inadequate stipends were also frequently reported as deterrents. Only computer scientists (20 percent) and chemists (15.8 percent) reported their second most frequent reason as little or no benefit being derived from a postdoctoral appointment. In the case of computer scientists, this finding was not surprising, given the low proportion who wanted postdoctorals (11.3 percent). In the case of chemists, however, nearly half (47.2 percent) had planned for postdoctoral study, so deciding against further study on the basis that it would provide little or no benefit was not expected.

Note also that Appendix A, Table 2, pages 48-53, shows the percentage of recipients with definite study plans, by field and sex, and that Appendix A, Table 5, pages 56-57, shows the percentage by race and citizenship. Overall, men were more likely than women to have planned a postdoctoral appointment (24.2 percent versus 18.0 percent), and Mexican Americans were the least likely group to plan postdoctoral study (14.7 percent). Both of these findings are at least partially dependent on field differences between the sexes and among the races, with women and underrepresented minorities concentrating in the non-science fields where postdoctoral opportunities are few.

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[4] See discussion on pages 80-85 of Porter E. Coggeshall, *Postdoctoral Appointments and Disappointments*, Washington, D.C.: National Academy Press, 1981.

TABLE I: Reasons for Taking Postdoctoral Study, by Field, 1986

	Reasons for Postdoctoral Study*					
Field	Total Planning Postdocs	Additional Experience	Particular Scientists	Switch Fields	No Desired Employment	Other/ Unknown
Total All Fields	7,004	3,945	1,189	672	487	711
%	22.0	56.3	17.0	9.6	7.0	10.2
Physics/Astronomy	51.7	70.2	17.9	5.4	2.6	3.9
Chemistry	47.2	57.2	14.7	15.5	8.9	3.6
Earth/Atmospheric/ Marine Sciences	36.0	55.7	26.4	2.8	10.8	4.3
Mathematics	23.7	68.8	23.7	2.9	1.2	3.5
Computer Sciences	11.3	48.9	44.4	–	4.4	2.2
Engineering	19.2	57.9	19.0	6.2	9.4	7.5
Biochemistry	78.5	49.6	19.2	20.8	3.1	7.4
Other Biosciences	66.1	56.2	16.8	12.3	5.9	8.8
Health Sciences	15.4	51.3	25.2	5.0	3.4	15.1
Agricultural Science	23.3	58.1	15.6	5.9	13.3	7.1
Psychology	18.4	40.8	16.3	5.1	6.4	31.5
Other Social Sciences	11.0	63.2	8.9	4.3	9.2	14.4
Humanities	8.0	49.6	9.1	4.0	14.9	22.4
Education	3.7	55.3	15.9	6.1	6.9	15.9
Professional Fields	2.8	61.1	14.8	5.6	3.7	14.9

*Item 21A asked respondents with postdoctoral study plans to check one of the following as the most important reason for taking a postdoctoral:

- "To obtain additional research experience in my doctoral field"
- "To work with a particular scientist or research group"
- "To switch into a different field of research"
- "Could not obtain the desired type of employment position"
- "Other reason"

TABLE J: Reasons for Deciding Against Postdoctoral Study, by Field, 1986

		Reasons Against Postdoctoral Study*				
Field	Total Decided Against	No Postdoc Available	Little/No Benefit	Stipend Inadequate	Attractive Employment	Other/ Unknown
Total All Fields	6,257	1,255	690	809	2,542	961
%	19.7	20.1	11.0	12.9	40.6	15.4
Physics/Astronomy	17.9	9.9	12.2	18.8	49.8	9.4
Chemistry	18.3	5.5	15.8	13.5	58.9	6.3
Earth/Atmospheric/ Marine Sciences	23.6	23.7	8.6	6.5	49.6	11.5
Mathematics	24.1	37.5	5.7	5.1	42.0	9.7
Computer Sciences	17.5	10.0	20.0	5.7	48.6	15.8
Engineering	16.7	18.4	15.9	13.6	44.8	7.2
Biochemistry	8.4	–	6.3	29.2	52.1	12.5
Other Biosciences	14.1	17.0	10.4	14.6	44.6	13.4
Health Sciences	22.8	15.9	9.1	19.3	35.8	19.8
Agricultural Science	20.0	20.8	9.5	11.7	51.5	6.5
Psychology	28.3	11.0	8.9	28.1	36.6	15.4
Other Social Sciences	21.2	27.0	8.7	10.2	39.3	14.8
Humanities	24.5	31.4	9.8	5.1	37.4	16.4
Education	18.2	19.6	12.5	9.1	33.8	25.0
Professional Fields	17.3	28.7	10.2	7.8	36.2	17.1

*Item 22D asked those with employment plans if they seriously considered postdoctoral study; and, if yes, why did they decide against the postdoctoral:

- "No postdoctoral appointment available"
- "Felt that I would derive little or no benefit from a postdoctoral appointment"
- "Postdoctoral available but stipend inadequate"
- "Had more attractive employment opportunity"
- "Other"

FIELD DIFFERENCES

Thus far, differences among the seven broad fields have been touched on in terms of their demographic composition, sources of support, time-to-degree, and postgraduation plans. In this section, these broad fields are broken into 30 selected "cluster" fields: 20 in the sciences and 10 in the non-sciences. Demographic trends, time-to-degree patterns, and trends in postgraduation plans are here reviewed for each of these clusters starting in 1958, the year the Survey of Earned Doctorates began. In addition, comparisons of 1977 and 1986 data on major sources of support are made.

Demographic Trends

Appendix Table C, pages 66-71, displays the demographic trends at 2-year intervals beginning in 1958. Doctorate production overall grew in the first half of this period, peaking in 1973. Thereafter, production declined for a short while, rebounded, and then leveled off. By 1986, the number of recipients overall was nearly 6 percent lower than in 1973, yet different production trends emerged when the data were disaggregated by cluster field and demographic characteristic. For example, in 1986 the number of Ph.D.s in physical sciences was 8 percent less than in 1973, and the number in mathematics (which is under the physical sciences umbrella) was 40 percent less. As noted above, the relevance of new numbers is dependent on the size of the existing field as well as the demand for replacement.

Demographic disparities were also observed within fields. For example, women in the humanities approached parity with men in 1986, when they earned 45.2 percent of the Ph.D.s. However, within-field differences were more than apparent: women received only 20.2 percent of the new doctorates in philosophy, versus 58.4 percent in English and American language and literature. Another type of difference was within engineering, in which the average percentage of temporary residents was 40.6 percent. Nonetheless, the proportion of temporary visa-holders ranged from a low of 36.8 percent in chemical engineering to a high of 48.8 percent in civil engineering. Finally, broad field data can also be compared with within-field differences. One such interesting comparison is between the percentage of blacks earning Ph.D.s in the sciences and engineering (2.7 percent in 1986) with the percentage earning doctorates in science teaching fields (12.8 percent).

Physical Sciences

- *Size of cohort.* Among the physical sciences, recent trends in size of cohort appeared similar to the overall pattern described above. The growth evidenced in the 1980s, however, disguised the fact that the cluster field of mathematics never stemmed the decline that began in the 1970s. The 730 mathematics doctorates earned in 1986 were

43 percent fewer than the 1,281 Ph.D.s earned in 1972. Note that the field of computer sciences was added in 1977, and it attracted some scholars who might otherwise have studied mathematics (or engineering). Yet even when the computer scientists were added to the mathematicians, the combined number in 1986 (1,129) still represented a loss that was double the average size of decline (12 percent, instead of 6 percent). Moreover, the field of mathematics decreased despite its attraction of the largest component of temporary visa-holders of any of the physical sciences--37.3 percent.

- *Gender*. Women in the physical sciences have traditionally been underrepresented; they were only 16.3 percent in 1986. When the survey began in 1958, women's largest presence in the physical sciences was in mathematics--5.9 percent. By 1986, it was largest in chemistry--20.8 percent.
- *Race/ethnicity*. The racial composition of physical sciences subfields did not look much like the overall picture. Asians were more heavily concentrated here than in the general distribution, except in the earth and atmospheric cluster; Asians earned an especially high share of computer sciences degrees (29.7 percent). Blacks were underrepresented in all the clusters; their largest share of Ph.D.s was in chemistry (2.0 percent). Of all the physical sciences, mathematics had the highest percentage of Hispanic degree-earners (6 percent).
- *Citizenship*. Temporary residents earned over a quarter of the physical sciences degrees in 1986, principally in mathematics, as noted above. Permanent residents were overrepresented in computer sciences, where they earned 11.8 percent of the degrees.

Engineering

- *Size of cohort*. In engineering, a renaissance of interest brought the 1986 total degree production to its second highest level ever. In 1986, 3,376 individuals earned Ph.D.s in engineering, a number just 3.5 percent less than the 1971 peak of 3,498.
- *Gender*. Engineering remained the domain of male recipients. The percentage of women was 6.7 percent overall and ranged from 3.2 percent in mechanical engineering to 11.1 percent in chemical engineering.
- *Race/ethnicity*. Asians were more heavily concentrated in engineering than in any other doctorate field, whereas whites were the least concentrated. The largest share of Asians and the smallest share of whites were in chemical engineering. As in physical sciences, blacks were underrepresented. The highest proportion of black engineers--3.5 percent--was in civil engineering.
- *Citizenship*. Whereas the 1986 class of engineers was nearly the size of the 1971 cohort, a crucial difference was that only 40 percent of the 1986 cohort were U.S. citizens, compared with 75 percent of the 1971 cohort. In civil engineering, the presence of U.S. citizens was particularly low--31.5 percent. Mechanical engineering was also low in the number of U.S. citizens (38.2 percent). The subfield with the highest share of Americans was chemical engineering--46 percent; this subfield also had the highest percentage of women, which recalls the large, negative correlation observed between women and foreign citizens, discussed earlier (page 8).

Life Sciences

- *Size of cohort*. The number of doctorates in the life sciences climbed to its highest level in 1985--5,759 doctorates--and was substantially the same in 1986, when there were 5,720 recipients. Nonetheless, the number of biological scientists had already peaked to date: microbiologists and bacteriologists peaked in 1970, biochemists in 1980, other bioscientists in 1982. Moreover, there were 100 fewer agriculture recipients in 1986 than in 1985. Health scientists increased, however, and peaked in 1986 with 772 Ph.D.s.
- *Gender*. In health sciences, women have dramatically increased their percentage, and their share is the largest of any cluster field, 62 percent. Women earned slightly over a

third of the biological science doctorates, the second highest share of all the natural sciences.

- *Race/ethnicity*. American Indians earned 0.9 percent of the degrees in health sciences--their largest share of any Ph.D. The shares of blacks and Hispanics within agricultural sciences were relatively high and were the largest the groups had in any of the natural sciences--5.7 percent and 6.2 percent, respectively.
- *Citizenship*. Individuals earning degrees in the biological sciences were predominantly American--approximately 80 percent. This was the Americans' largest share of any of the natural science and engineering fields. In contrast with the other life science fields, nearly a third of agricultural Ph.D.s were temporary visa-holders.

Social Sciences

- *Size of cohort*. Degrees in social sciences peaked at 6,142 in 1981 but dropped 5 percent, to 5,841 doctorates, in 1986. Still, two clusters were larger than in 1981: economics (including econometrics) and clinical psychology (including counseling and school psychology). The political science/international relations cluster fell to its lowest number in 20 years--490, or nearly half the number of doctorates conferred in peak year 1972.
- *Gender*. The entire loss of political scientists was made up of male recipients, for the number of female political scientists increased, and their share rose from 10.3 percent in 1972 to 26.9 percent in 1986. Of all the social sciences, economics had, proportionately, the fewest women (19.3 percent). On the other hand, men and women were at parity in psychology, where the number of women increased while the number of men declined.
- *Race/ethnicity*. Psychology was also the specialty with the largest presence of white doctorates (about 90 percent). Blacks earned a greater percentage of degrees in political science and international relations than in any other field of science (7.7 percent).
- *Citizenship*. Of all the social sciences, economics had the largest presence of temporary residents--31.5 percent. The smallest share of non-U.S. citizens was in psychology, especially clinical psychology.

Humanities

- *Size of cohort*. In 1986, there were 3,461 doctorate humanists. As mentioned earlier, this number represented a decline of 36 percent since the peak reached in 1973. The loss was even greater among doctorates in philosophy (38.8 percent), English and American language and literature (49 percent), foreign languages and literature (51.5 percent), and, especially, history (53.7 percent). The rest of the humanities disciplines did not face such heavy losses. In fact, at least one field grew larger: doctorates in music grew by 36 percent between 1973 and 1986. In addition, there was relative stability among some other large subfields such as linguistics, art history and criticism, and religion. Finally, the addition of theatre as a specialty in 1977 had a slight effect on increasing the number of doctorates conferred in humanities; the increase in 1986 was 2.6 percent.
- *Gender*. Women earned 45.2 percent of the humanities doctorates in 1986, approaching parity with men. But when data were disaggregated by cluster field, the pattern diverged. In languages and literature, the number of women exceeded men by nearly 3 to 2. Conversely, in history the ratio of men to women was 2 to 1; in philosophy, it was 4 to 1.

These distributions are puzzling, and differences in labor markets among the subfields of humanities fuel the question. Data from a follow-up employment survey of humanities doctorates show that the subfields with the highest unemployment rates were modern languages and literature and classical languages and literature; with the lowest unemployment rates were American history and philosophy. Moreover, doctorates in languages and literature had median annual salaries ranging from $32,600 to $34,100, whereas doctorates in history and philosophy had median salaries ranging from $36,100 to $37,300.[5] The association of more favorable markets with a larger presence of men in a field would be interesting to pursue.

- *Race/ethnicity*. The highest proportion of Hispanics in any doctorate field was in the foreign languages and literature cluster: 18.2 percent, more than five times their overall share of 3.6 percent.
- *Citizenship*. Except in foreign languages and literature, the proportion of non-U.S. citizens was quite low. Humanities, like social sciences and education, seems not to attract foreign citizens.

Education

- *Size of cohort*. The number of doctorate recipients in education reached its peak at 7,725 in 1976 but fell by 14.5 percent to 6,602 recipients in 1986. Proportionately, most of the decline has been in the science teaching areas, which include science, social science, mathematics, agriculture, and nursing education. The peak in these science teaching specialties was reached in 1972; by 1986 they had declined by 51.3 percent. The decline does not neatly fit the pattern in the actual science fields, for while Ph.D.s in the social sciences and mathematics have indeed been decreasing, degrees in agriculture and nursing have not.
- *Gender*. In 1983, the number of women in education exceeded the number of men for the first time, and this phenomenon continued through 1986. Nonetheless, men continued to dominate in the subfield of education administration (see Appendix A, Table 1, page 43). Moreover, men retained their dominant position in science education, although that position appeared to be eroding: in 1986, the science education specialties were 56.7 percent male.
- *Race/ethnicity*. In education overall, and in science teaching particularly, the proportion of degrees earned by blacks was larger than in any other field. Blacks earned 8.8 percent of all education doctorates in 1986 and 12.8 percent of the degrees in science teaching fields.
- *Citizenship*. Science teaching fields also attracted larger shares of non-U.S. citizens, especially temporary residents, than did the remaining fields of education (science teaching's share of temporary residents was 18.5 percent; other teaching, 8.8 percent; nonteaching, 6.0 percent).

Professional Fields

- *Size of cohort*. 1986 was the peak year for doctorates in professional fields. While close to half of these 1,936 Ph.D.s were awarded in business and management, most of the growth was outside the business specialties. Still, the business cluster experienced continued growth, although at a slower rate than the rest of the professional fields.
- *Gender*. The share of women in business was 23 percent in 1986: not high, but quite a large increase compared with the approximately 3 percent share attained during the 1958-1972 period. In the other professional fields, women's share was much higher--43.7 percent.
- *Race/ethnicity*. Business, more than any field outside the natural sciences and engineering, attracted a large share of Asian degree-earners. Blacks and Hispanics, however, were underrepresented.
- *Citizenship*. Of the non-sciences, business and management had the largest share of temporary visa-holders (22.8 percent).

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[5] Betty D. Maxfield and Prudence Brown, *Humanities Doctorates in the United States: 1985 Profile*, pages 17 and 28, Washington, D.C.: National Academy Press, 1986.

The changes in male-female distribution that led to some disciplines becoming predominantly female are shown in Figure 6, below. This figure depicts the typical pattern of men's decrease and women's increase in health sciences, psychology, and education as well as the less prevalent pattern--of decreasing numbers of degrees earned by either sex--in languages and literature.

Conversely, Figure 7 (page 26) displays the very slow progress made by women in the physical sciences, engineering, and agriculture, fields in which women hold less than 20 percent of the Ph.D.s.

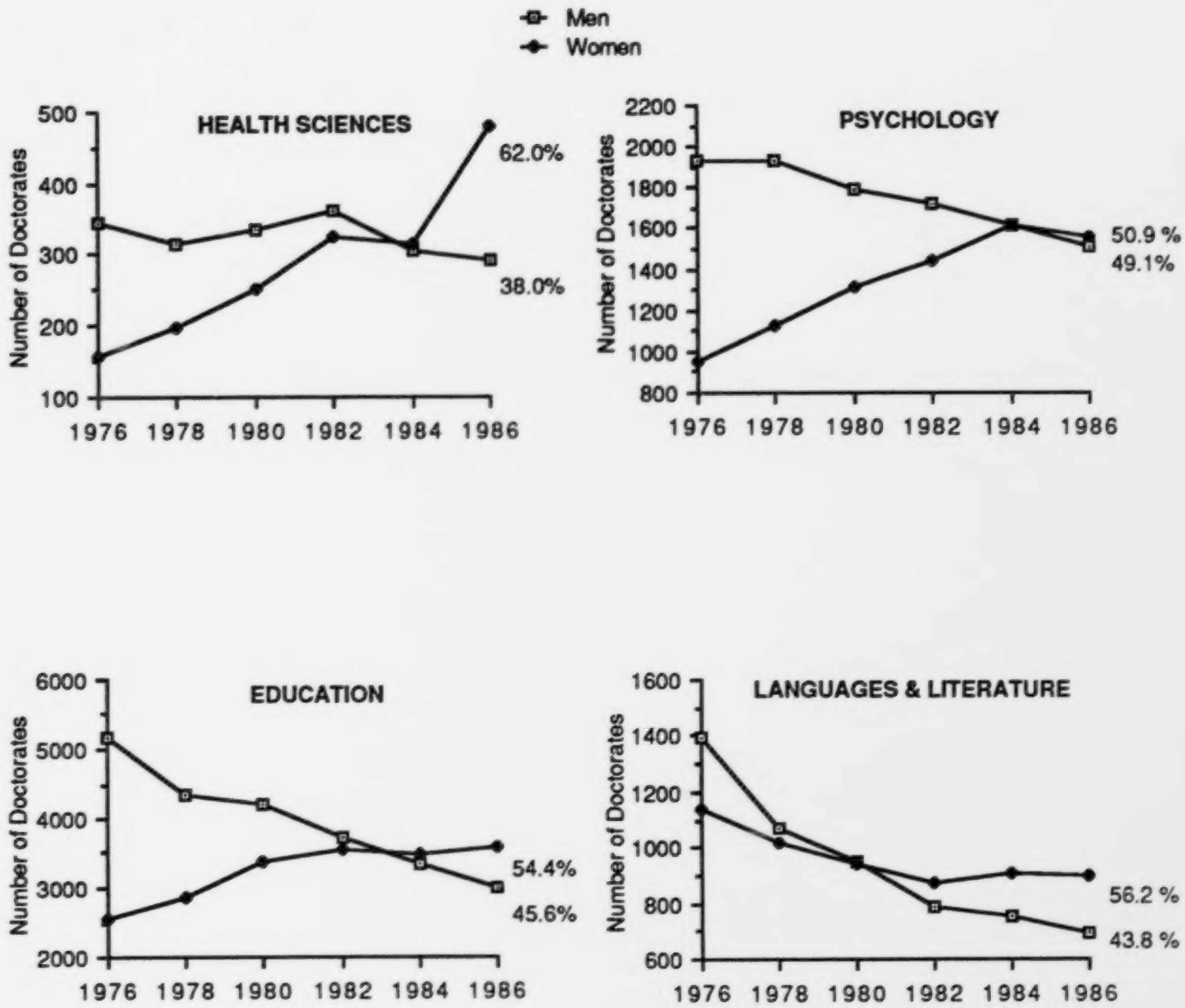

FIGURE 6 Gender distribution in female-dominated fields, 1976-1986.

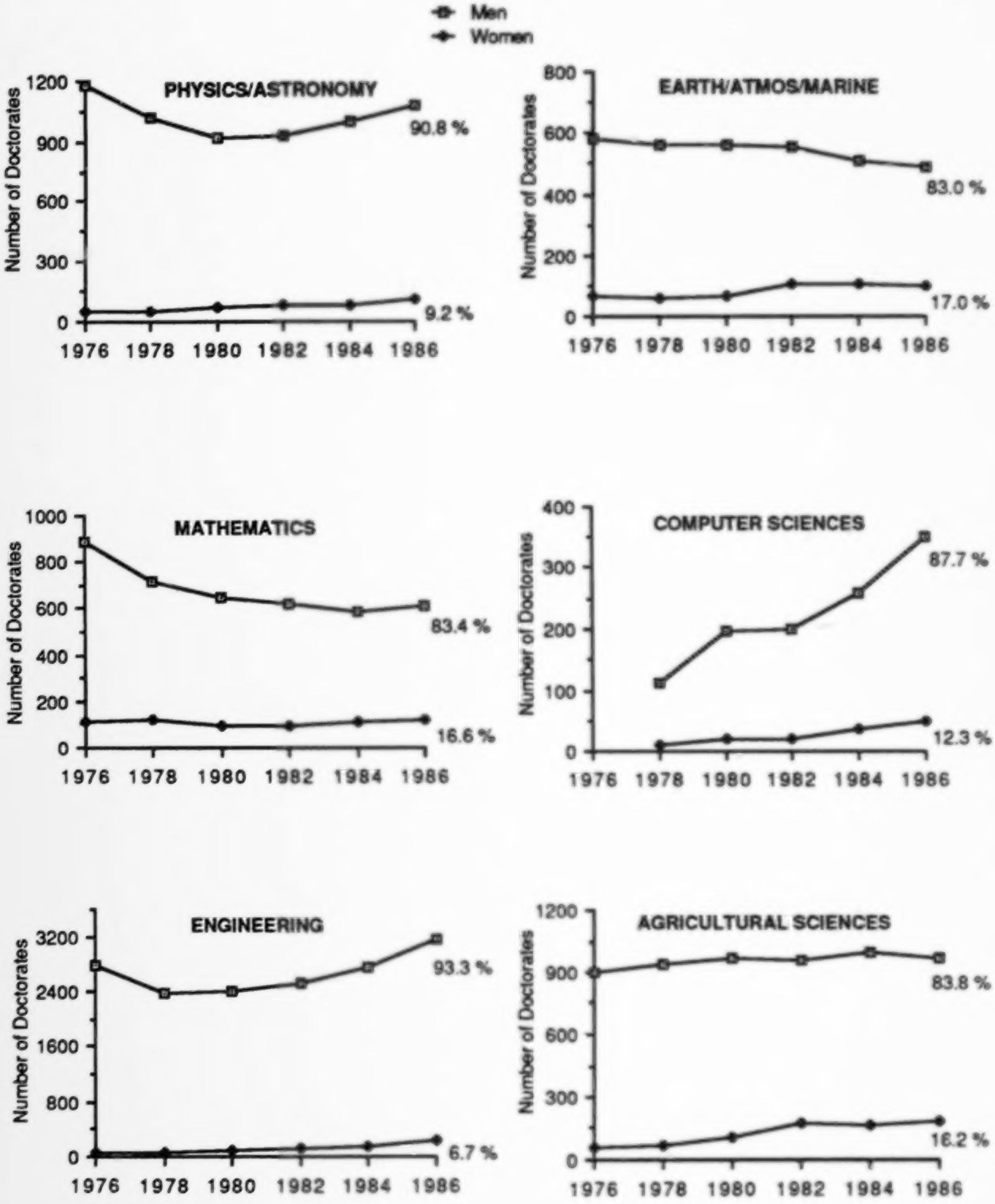

FIGURE 7 Gender distribution in female-underrepresented fields, 1976-1986.

Sources of Support in Graduate School

As discussed on pages 13-14, the four basic avenues of financial support in graduate school are personal, university-related, federal, and "other." In addition to differences across the seven broad fields, different patterns emerged within fields (see Table K, page 28).

Physical Sciences and Engineering

The 1977-1986 shift away from federal support affected the subfields differently. Mechanical engineers, for instance, were most affected; their reliance on federal support dropped 13 points, from 15.1 percent in 1977 to 2.2 percent in 1986. The displacement was distributed among the other three categories, particularly to university-related sources. Reliance on university sources was highest among recipients in physics/ astronomy--that share rose from 75.8 percent in 1977 to 84.0 percent in 1986.

Life Sciences

When life sciences were disaggregated, health sciences emerged as wholly different from the rest of the science doctorates. In 1977, health scientists comprised the only cluster field that had a plurality of recipients relying primarily on federal support. As federal funding closed off, however, self-support became the most frequently reported major source by 1986.

Social Sciences

As discussed in the general section, natural scientists and engineers typically replaced federal support with university-related sources, but social scientists had a greater shift toward self-support. The exception to the rule was made by the economists who, like natural scientists, had a greater percentage of recipients shifting to university sources than to personal sources. Most affected by the turn to personal sources were the clinical psychologists, whose self-supporting percentage rose from 46.4 percent in 1977 to 66.8 percent in 1986. This kind of result was not as pronounced for other, generally more research-oriented psychologists, whose self-support rose from 36.4 to 48.6 percent.

Humanities

Recipients in certain subfields of humanities also evidenced differences from the general pattern of support for humanists. Typically, humanists replaced federal support with personal support. However, Ph.D.s in history, philosophy, and foreign languages reported greater percentages with support from university sources in 1986 than in 1977.

Education and Professional Fields

Not only did federal support decline for doctorate recipients in education, but also university-related support was reported by proportionately fewer recipients in 1986 than in 1977. Percentages with primary personal support were greater in education than in any other cluster. Finally, Ph.D.s in business and management shifted to university sources rather than to self-support in 1986, but proportionately more doctorates in other professional fields shifted to personal sources.

TABLE K: Primary Sources of Support of Doctorate Recipients in 30 Selected Fields, 1977 and 1986

	Primary Sources of Support							
	Personal		University		Federal		Other	
Fields	1977	1986	1977	1986	1977	1986	1977	1986
TOTAL ALL FIELDS %	36.1	42.1	41.9	44.8	16.1	7.2	5.8	6.0
PHYSICAL SCIENCES								
Physics and Astronomy	9.8	7.5	75.8	84.0	10.2	4.4	4.2	4.1
Chemistry	9.8	10.3	74.6	81.4	11.7	5.2	3.9	3.1
Earth/Atmos/Marine Sciences	17.3	18.9	56.4	70.9	19.4	6.1	7.0	4.1
Mathematics	17.7	14.0	64.1	74.2	11.8	5.3	6.4	6.5
Computer Sciences	45.0	25.6	55.0	58.2	0.0	4.1	0.0	12.1
ENGINEERING								
Electrical/Electronic	18.6	15.0	57.7	71.0	11.1	3.1	12.6	11.0
Chemical	11.0	7.1	65.3	78.6	13.9	8.6	9.8	5.7
Civil	21.3	23.6	60.3	58.7	7.8	6.2	10.6	11.5
Mechanical	15.1	16.7	61.2	69.7	15.1	2.2	8.6	11.4
Other	17.3	17.8	60.0	64.1	12.9	7.0	9.8	11.2
LIFE SCIENCES								
Biochemistry	8.9	13.6	45.4	58.9	42.3	25.8	3.4	1.7
Microbiology/Bacteriology	14.5	21.4	42.5	53.7	40.2	20.0	2.8	4.9
Other Biosciences	16.5	21.1	47.4	50.1	31.5	24.7	4.6	4.1
Agricultural Sciences	17.9	20.5	61.2	59.3	8.9	4.9	12.0	15.3
Health Sciences	32.7	51.2	24.6	25.1	37.3	14.9	5.3	8.8
SOCIAL SCIENCES								
Economics & Econometrics	24.9	27.7	52.1	56.2	14.2	5.3	8.8	10.8
Political Sci & Int'l Relations	36.0	42.8	37.1	41.2	15.9	6.8	11.0	9.2
Clin/Couns/School Psych	46.4	66.8	22.2	25.2	28.9	6.0	2.5	2.0
Other Psychology	36.4	48.6	38.6	41.2	22.1	7.8	2.8	2.5
Other Social Sciences	31.4	43.8	36.1	41.2	25.1	7.4	7.4	7.6
HUMANITIES								
History	43.8	51.2	33.7	36.9	16.3	6.1	6.2	5.9
Philosophy	33.0	41.4	47.3	54.8	12.8	0.5	6.9	3.3
English & Amer Lang & Lit	36.0	49.0	52.1	47.4	7.4	1.3	4.4	2.3
Foreign Lang & Lit	32.7	32.8	49.8	59.7	14.1	4.8	3.5	2.7
Other Humanities	44.9	53.1	37.6	38.3	10.6	3.1	6.9	5.6
EDUCATION/PROF FIELDS								
Education, Nonteaching	68.2	81.6	18.9	11.1	8.4	2.3	4.5	5.0
Teaching, Science Fields	53.3	65.7	33.3	21.4	9.6	3.3	3.7	9.5
Teaching, Other Fields	61.1	72.3	24.6	19.6	8.6	2.8	5.7	5.3
Business & Management	40.8	40.8	45.2	48.7	7.1	2.9	6.8	7.6
Other Professional Fields	53.1	63.3	25.5	26.7	14.4	4.4	7.0	5.6

Median Time-to-Degree

In the general section, differences were examined by broad field in time elapsed to earn the Ph.D. That section only looked at the period 1976-1986 but found increases in the median total and registered times-to-degree in every field in that period. ("Total time" measures the period between earning the baccalaureate and earning the doctorate; "registered time" is limited to that period a recipient indicates he or she is enrolled in graduate school.) Upward trends are not inevitable progressions, however.

Total Time

Data from the entire survey show the following trend in total time: a gradual increase from 8.4 years in 1958 to 8.9 years in 1961, decreasing to a low of 7.9 years in 1970 and 1971, followed by a steady rise to 1986's median total time of 10.4 years (see Figure 8).

Even when data were disaggregated, the phenomenon of lengthening time-lapse occurred in every field (see Table L, page 30). Nonetheless, some fields were more stable than others: doctorates in physics/astronomy, e.g., had the least variable time-lapse line. What is more, recipients in some cluster fields did not always resemble those of other clusters in the same broad field. For example, the time-lapse of health scientists was not in step with time-lapse variations in the other life sciences. Indeed, health scientists did not even follow time-to-degree patterns similar to those of natural scientists. When the 30 cluster fields were divided between the top 15 "shorter-time" and the remaining 15 "longer-time" fields, all of the natural sciences and engineering except health sciences fell into the 15 "shorter-time" group. Second, economics did not fall into the "longer-time" group as did all of the other social- and non-science fields. As with demographic characteristics, both exceptions were further instances of health scientists resembling non-science doctorates and of economists resembling natural scientists in their degree processes.

The three subfields with the shortest total time-to-degree (6.5, 6.8, and 7.3 years) were drawn from three different broad fields, but had a single discipline in common: chemistry. These three were chemistry (physical sciences), chemical engineering (engineering), and

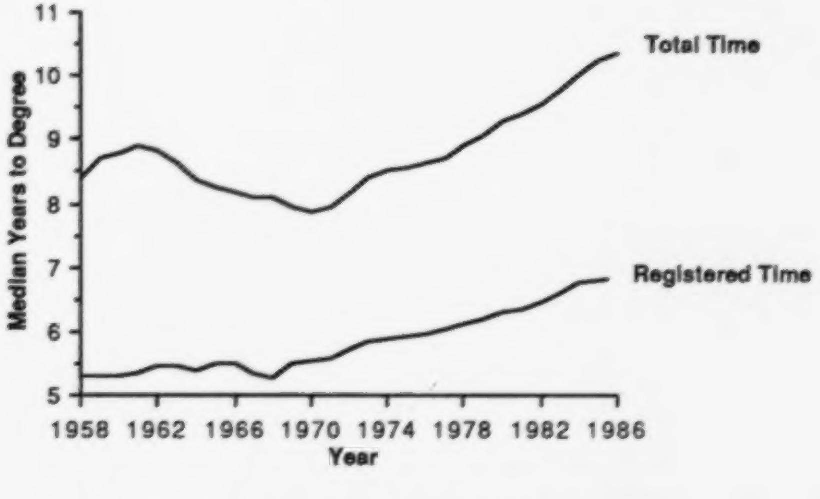

FIGURE 8 Median years to degree, all fields combined, 1958-1986.

TABLE L: Median Total Years to Degree of Doctorate Recipients in 30 Selected Fields, 1958-1986

	Median Total Years							
Fields	1958	1962	1966	1970	1974	1978	1982	1986
TOTAL ALL FIELDS	8.4	8.8	8.2	7.9	8.5	8.9	9.6	10.4
PHYSICAL SCIENCES								
Physics and Astronomy	6.4	7.0	6.4	6.5	7.2	7.3	7.4	7.3
Chemistry	5.5	5.8	5.5	5.6	6.0	6.4	6.0	6.5
Earth/Atmos/Marine Sciences	7.5	8.1	7.4	7.7	8.1	7.9	8.3	9.0
Mathematics	7.1	7.1	5.8	6.0	7.0	7.1	7.0	7.3
Computer Sciences	–	–	–	–	–	7.9	7.7	9.1
ENGINEERING								
Electrical/Electronic	7.4	6.9	7.2	6.7	7.4	7.0	7.7	7.9
Chemical	6.1	6.3	5.7	6.3	6.5	6.6	7.0	6.8
Civil	8.5	8.3	8.2	7.2	8.8	8.0	8.5	8.7
Mechanical	8.5	6.9	7.5	7.2	7.7	8.1	8.2	8.3
Other	7.5	7.4	7.0	7.1	7.8	7.7	8.2	8.5
LIFE SCIENCES								
Biochemistry	7.0	7.0	6.3	5.9	6.2	6.3	6.7	7.3
Microbiology/Bacteriology	7.6	8.7	7.4	6.4	6.8	6.6	6.9	8.0
Other Biosciences	7.4	7.9	7.2	6.5	7.1	7.3	7.4	8.3
Agricultural Sciences	7.1	7.5	8.2	7.4	8.0	8.0	8.2	9.2
Health Sciences	6.9	10.4	10.0	9.0	8.6	8.7	10.4	11.9
SOCIAL SCIENCES								
Economics & Econometrics	8.6	9.6	7.7	7.3	7.4	8.1	8.3	8.4
Political Sci & Int'l Relations	10.0	8.9	8.2	8.2	8.9	9.2	10.0	10.5
Clin/Couns/School Psych	8.1	9.5	7.7	6.8	7.3	7.4	8.7	9.7
Other Psychology	7.5	7.7	6.5	6.1	6.5	7.4	8.4	9.7
Other Social Sciences	9.1	9.9	9.5	8.7	8.8	9.2	10.4	11.7
HUMANITIES								
History	9.4	9.4	8.9	8.9	9.1	10.5	11.1	12.2
Philosophy	8.9	9.6	7.4	8.0	8.5	8.5	9.8	10.1
English & Amer Lang & Lit	10.1	10.3	9.9	8.7	9.0	9.9	11.2	12.2
Foreign Lang & Lit	10.6	10.9	9.7	9.0	9.3	10.6	11.5	12.2
Other Humanities	10.4	10.7	11.5	10.5	10.2	10.4	11.2	12.3
EDUCATION/PROF FIELDS								
Education, Nonteaching	–	12.8	14.3	12.8	12.5	12.8	13.8	16.0
Teaching, Science Fields	–	12.4	13.7	11.6	11.6	11.9	13.5	15.3
Teaching, Other Fields	15.1	12.9	14.1	13.0	12.2	12.5	12.9	14.6
Business & Management	9.2	9.6	9.1	9.3	9.1	9.9	11.0	11.9
Other Professional Fields	15.2	13.1	14.9	13.3	11.0	11.5	12.1	13.7

biochemistry (life sciences). These three clusters were also characterized by having high percentages planning postgraduate study. At the other end of the spectrum, the three subfields with the longest time-lapse (14.6, 15.3, and 16.0 years) were all in education: other teaching fields, science teaching fields, and nonteaching fields. The longer time-lapse is due in part to the practice of these recipients not to be registered in school during much of the period between earning their baccalaureates and earning their doctorates.

Registered Time

As noted in the earlier section, recipients' registered time-to-degree was considerably less than their total time-to-degree (see Table M, page 32). Another difference was observed in the 1960s, in which total time-lapse declined, but registered time did not. Instead, it grew modestly: median registered time was 5.3 years in 1958 and 5.5 years in 1970. The fact that registered time was slowly increasing during the 1960s (except 1967-68) suggests that external forces, rather than programmatic changes, were influencing the decrease in total time. The post-Sputnik shift in federal priorities, with increases in R&D support, and the associated build-up of academic employment may have helped to accelerate recipients through the pipeline, by smoothing access and enhancing motivation.

In the 1970s and 1980s, however, the pattern of increasingly longer time-lapse was as true for registered time as it was for total time, although it was much lower: by 1986, registered time was a median 6.8 years. The steeper slope of total time's increase after 1970 also implies the influence of external forces on degree completion time.

When measured in registered time, the subfields with the shortest time-lapse were in engineering and chemistry. This finding is consistent with the total time-lapse measure. However, the longest registered time-lapses were all in humanities--history and languages and literature--rather than in education, which had the longest total time-to-degree.

TABLE M: Median Registered Years to Degree of Doctorate Recipients in 30 Selected Fields, 1958-1986

Fields	Median Registered Years							
	1958	1962	1966	1970	1974	1978	1982	1986
TOTAL ALL FIELDS	5.3	5.4	5.5	5.5	5.9	6.1	6.5	6.8
PHYSICAL SCIENCES								
Physics and Astronomy	5.4	5.7	5.6	5.7	6.1	6.2	6.4	6.3
Chemistry	4.6	4.8	4.8	5.0	5.2	5.3	5.2	5.5
Earth/Atmos/Marine Sciences	4.5	5.1	5.7	5.6	5.8	6.1	6.4	6.9
Mathematics	5.4	5.2	5.0	5.2	5.5	5.8	5.9	6.0
Computer Sciences	–	–	–	–	–	5.7	6.4	6.5
ENGINEERING								
Electrical/Electronic	5.1	5.4	5.3	5.3	5.8	5.7	5.9	5.7
Chemical	4.6	4.8	4.6	4.9	5.2	5.1	5.2	5.4
Civil	5.4	4.9	4.9	4.9	5.6	5.4	5.6	5.8
Mechanical	5.0	5.1	5.5	5.4	5.5	5.7	5.8	6.0
Other	4.9	5.0	5.2	5.3	5.6	5.8	5.9	6.1
LIFE SCIENCES								
Biochemistry	5.3	5.4	5.3	5.2	5.2	5.4	5.8	6.0
Microbiology/Bacteriology	5.5	5.7	5.6	5.4	5.5	5.6	5.8	6.3
Other Biosciences	5.2	5.4	5.6	5.4	5.7	5.9	6.1	6.5
Agricultural Sciences	4.5	5.0	5.2	5.2	5.3	5.4	5.8	6.0
Health Sciences	5.1	5.9	6.0	5.6	5.5	5.9	6.3	6.9
SOCIAL SCIENCES								
Economics & Econometrics	4.9	5.0	5.0	5.2	5.4	5.7	6.1	6.3
Political Sci & Int'l Relations	5.1	5.1	5.2	5.6	6.1	6.7	7.3	7.8
Clin/Couns/School Psych	5.9	6.1	6.1	5.7	5.8	5.8	6.5	7.0
Other Psychology	5.4	5.3	5.3	5.1	5.2	5.7	6.4	7.0
Other Social Sciences	5.2	5.8	5.5	5.9	6.2	6.6	7.4	8.1
HUMANITIES								
History	5.9	5.7	5.8	6.3	6.8	7.7	8.4	8.5
Philosophy	5.9	5.9	5.4	5.5	6.3	6.7	7.7	8.0
English & Amer Lang & Lit	6.0	6.0	6.0	5.9	6.3	7.4	8.1	8.2
Foreign Lang & Lit	6.2	6.1	5.7	6.0	6.8	7.5	8.2	8.6
Other Humanities	5.7	5.9	6.3	6.3	6.6	7.0	7.7	8.1
EDUCATION/PROF FIELDS								
Education, Nonteaching	–	6.8	6.9	6.3	6.4	6.5	7.3	7.8
Teaching, Science Fields	–	6.7	6.3	6.2	6.2	6.7	6.8	7.3
Teaching, Other Fields	6.8	6.3	6.4	6.0	6.1	6.3	6.7	7.7
Business & Management	5.1	5.1	5.4	5.4	6.0	6.2	6.6	7.0
Other Professional Fields	5.8	5.6	5.4	5.5	6.0	6.1	6.8	7.7

Trends in Postgraduation Plans

In contrast with the decade-long stability in status of postgraduation plans, discussed above, the longer trend line of 1958 to 1986 indicates considerable change (see Figure 9). In 1958, 78.4 percent of recipients were either returning to their predoctorate employment or had made definite commitments to work or study; those still seeking or negotiating a position comprised 14.3 percent. The proportion with definite commitments rose in the early to mid-1960s to 83-84 percent, fell in the late 1960s and early 1970s, and then more or less leveled off to the present 66.4 percent. By 1986, the uncommitted share had risen to 24.7 percent.

Clearly, the uncommitted share does not translate into an unemployment rate, although the seeking status does appear to result in higher unemployment in the short term. Data from the 1985 Survey of Doctorate Recipients (SDR, described earlier on page 3) can be used to observe differences in unemployment rates between recipients with definite plans versus those who were still seeking a position.

Respondents from the 1984 Survey of Earned Doctorates (SED) were sampled by the SDR in 1985, with the following results: Ph.D.s whose postgraduate status was definite in fiscal year 1984 (July 1, 1983-June 30, 1984) had an overall unemployment rate of 0.8 percent in February 1985; Ph.D.s whose postgraduate status was seeking in FY1984 had an overall unemployment rate of 7.0 percent in 1985.[6]

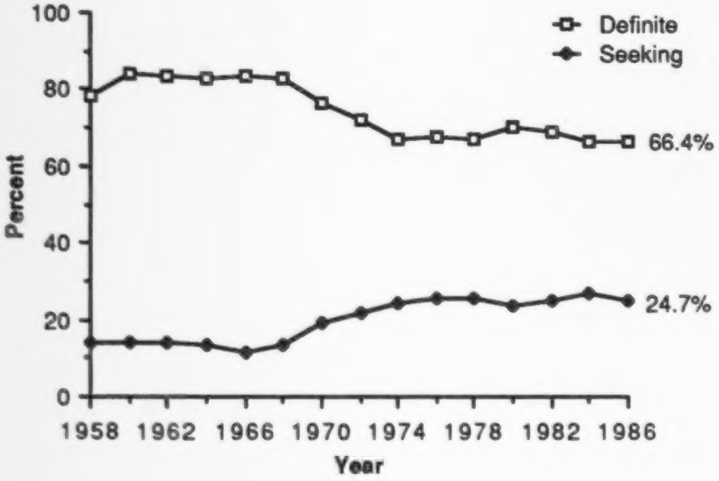

FIGURE 9 Status of postgraduation plans of doctorate recipients, 1958-1986.

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[6] The unemployment rate is calculated as the percentage of the labor force that is unemployed but seeking employment. Note that these rates are based on a survey of doctoral scientists, engineers, and humanists whose place of employment is the U.S.; rates for doctorates in education and professional fields or for the non-U.S. labor force may differ. Rates across fields are also quite variable, with humanists reporting higher rates of unemployment and engineers showing zero unemployment. Moreover, these rates are calculated 7-19 months after a respondent has completed his survey form; the longer recipients have been in the labor force, the lower their unemployment rates.

At the same time that plan status was changing, the type of postgraduation plans--either employment or postdoctoral study--was also in flux (see Figure 10). In the early years, 88.3 percent of the new Ph.D.s planned to be employed following their degree completion. By 1986, that proportion had dropped to 69 percent. Correspondingly, study plans jumped from 4.4 percent in 1958 to 22 percent in 1986. (The remaining recipients did not report their plans.) Moreover, in both type and status of plans, there were striking differences across and within fields (see Appendix Table D, pages 74-79).

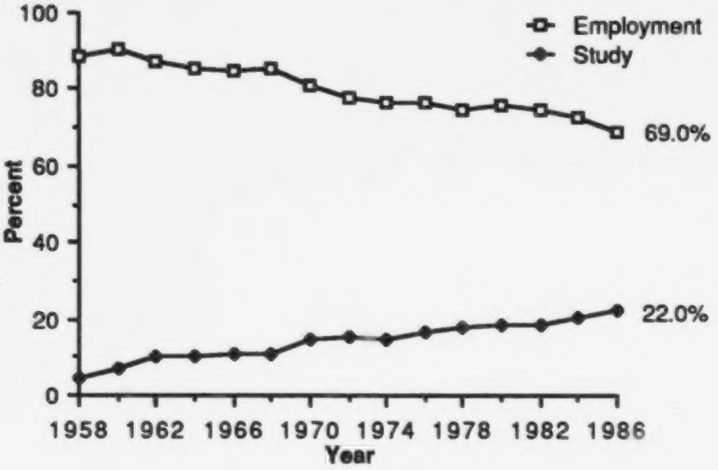

FIGURE 10 Type of postgraduation plans of doctorate recipients, 1958-1986.

Physical Sciences

- *Status of plans*. Most fields experienced a decline in definite commitments between 1968 and 1974, and physical sciences was no different. However, between 1974 and 1986, two clusters increased their percentages with definite plans: mathematics and physics/astronomy. Chemists had the biggest share with definite plans in 1986--71.6 percent.
- *Type of plans*. As shown earlier in the general section, postdoctoral study plans were unevenly distributed among the physical science clusters. Large shares of recipients in physics/astronomy (51.7 percent) and chemistry (47.2 percent) planned to obtain study appointments after graduation, primarily for additional research experience rather than because of job shortages (see Table I, page 19). On the other hand, computer scientists had a large share planning employment--79.2 percent--many of whom were going into the industrial sector (31.6 percent).

Engineering

- *Status of plans*. About 80 percent of new engineers had definite commitments in 1958, but by 1986 the proportion had dropped to 60 percent. Those with the largest percentage of definite commitments were the chemical engineers (66.4 percent); those with the largest percentage of seekers were the mechanical engineers (32.2 percent).

- *Type of plans*. Among engineers, the group with the highest percentage planning employment has historically been the specialists in electrical/electronics engineering--74.4 percent reported employment plans in 1986. These Ph.D.s most frequently planned employment in the industrial sector (40.2 percent), as did most other engineers. The only subfield in which more recipients planned to go into academe[7] than into business was civil engineering (34.4 percent versus 27.4 percent). On the other hand, the subfield with the highest percentage planning postdoctoral study was chemical engineering--25.8 percent, a substantial increase over the 2.3 percent who had study plans in 1958. The high rate of study plans is a common thread among chemists, chemical engineers, and biochemists.

Life Sciences

- *Status of plans*. Biochemists reported definite plans more frequently than any of the other doctorate fields within or outside life sciences (77.8 percent). This pattern coincided with high rates of definite plans reported by chemists and chemical engineers within their respective broad fields.
- *Type of plans*. Among life sciences in 1958, the range of those planning employment was 75-92 percent; by 1986, the range was lower and very much wider: 15-73 percent. Health scientists comprised the group that had the highest percentage intending employment after graduation (72.8 percent in 1986). As discussed earlier, plans for postdoctoral study have consistently been highest for recipients in the biological sciences. Nearly 16 percent of biochemists--more than three times the average--had such plans in 1958. By 1986, 78.5 percent of biochemists--still triple the average--planned to pursue a postdoctoral study appointment (the majority of these were fellowships).

The earlier discussion of postdoctoral study decisions centered on the need to acquire specialized skills, and biochemists were foremost in reporting their desire to switch fields. Moreover, they were the only group not to decide against postgraduate study because of the unavailability of an appointment. Finally, their definite plans for employment were the lowest of any group. The complexity of research and the availability of study appointments for biochemists, together with the seemingly low employment opportunities suggested, conjoin in attracting many persons in this field to postgraduate study.

Social Sciences

- *Status of plans*. The social science cluster with the greatest proportion having definite plans in 1986 was economics/econometrics (71.4 percent). The cluster with the lowest percentage of such plans was political science/international relations (57 percent).
- *Type of plans*. New doctorates in social sciences have typically had employment plans at the time they received their degrees, but the proportion has dropped from about 88 percent in 1958 to 75 percent in 1986. Economists, however, have substantially maintained the high 1958 rate--their employment plans declined only to 85.4 percent in 1986. Both in status and type of plans, economists tended to resemble natural scientists more than their colleagues in the social sciences.

When psychology was disaggregated between the clinical disciplines and the other, generally more academic disciplines, interesting differences appeared. Ph.D.s in the clinical fields consistently had a greater frequency of employment plans than did the psychologists in the more research-oriented fields. Furthermore, the clinicians had different sectoral plans. In 1958, clinicians most frequently planned to work for the government; in 1986, they most often had plans to work in the "other" setting, which here refers to elementary and secondary schools. The other psychologists continued to plan to go into academe, although those plans had dropped substantially, from 45 to 26 percent.

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[7] Academic employment includes positions in 4-year colleges and universities, junior colleges, medical schools, and foreign universities but excludes elementary and secondary schools.

Humanities

- *Status of plans*. Of all the doctorate fields, humanists had the smallest percentage of new Ph.D.s with definite commitments after graduation, 57 percent in 1986. Within the humanities, Ph.D.s in philosophy had the lowest such percentage, 55.6 percent. More than a third of the philosophy doctorates reported a seeking status in 1986--34.2 percent, the biggest share of any doctorate field.
- *Type of plans*. While the percentage of humanists planning postgraduate study increased from 2.8 percent in 1958 to 7.9 percent in 1986, the more typical and traditional route for humanists has been to secure employment (81.5 percent had such plans in 1986). This is because there are very few study appointments available: of all the recipients who decided against postdoctoral study, humanists had the second largest share who found no appointment available. Furthermore, doctorates in the humanities, more than doctorates in any other field, by and large planned to go into academe. Doctorates in English had the largest percentage both with employment plans in 1986 (86 percent) and with plans for the academic sector (71.3 percent). Few humanities doctorates planned to work in industry; philosophers had the highest percentage going to the industrial sector, and that was only 7.7 percent. Historians were the most likely humanists to have postgraduate study plans (10.8 percent), most of which involved fellowships.

Education

- *Status of plans*. Education doctorates generally had high percentages with definite commitments (72 percent). However, specialists in the non-science teaching fields had fewer such commitments than their counterparts in this broad field (60 percent).
- *Type of plans*. The percentage of educators with study plans was quite small, about 3.5 percent, because so few opportunities for study appointments exist for this field. The nonteaching concentrations and the science teaching fields had the highest proportions of new doctorates planning employment. This trend has been in place since 1958, with only a small erosion in the percentage with employment plans.

Employment sectors diverged within the broad field of education. Doctorates in science teaching fields had the greatest percentage planning to enter academe. Far fewer in the nonteaching fields--which include the popular disciplines of education administration and curriculum/instruction--planned academic employment, and over a third intended to work in the "other" sector--here, elementary or secondary schools.

Professional Fields

- *Status of plans*. Individuals with Ph.D.s in professional fields tended to have definite postgraduate commitments. This was especially true in business and management, where 76.4 percent of the new doctorates had definite plans.
- *Type of plans*. Few recipients in professional fields had study plans, as such opportunities are rare. Still, what few study plans were made contrasted with the earliest survey years, when no Ph.D.s at all from professional fields had study appointments. The cluster with the biggest share of new doctorates planning employment in 1958 was, not surprisingly, business and management--95.8 percent. Fully 80 percent of these recipients planned to go into academe. By 1986, the proportion of business and management Ph.D.s with employment plans remained high--88.3 percent--and a large proportion still planned academic employment (73.6 percent). Moreover, their percentage with postgraduate study plans was smaller than the percentage of other recipients in the professional fields.

Summary

Disaggregation of the data to the level of cluster fields allowed for comparisons that might otherwise go unobserved. For example, the robust numbers of physical science doctorates as a broad field eclipsed the rather dramatic decline in the number of mathematics degrees in the last 15 years. Moreover, the decline in humanities doctorates belied the relative stability in linguistics, religion, art history, and music.

Demographic details also were highlighted. The near-parity of women with men in the humanities was contrasted with men's dominance in the subfields of history and philosophy. The paucity of blacks in the broad fields of science was contrasted with their high proportions in science teaching fields. The 11.5 percent of social science doctorates earned by temporary visa-holders was not evenly distributed: 31.5 percent of economics Ph.D.s were earned by temporary residents in 1986, whereas only 1.3 percent of the clinical psychology degrees went to temporary visa-holders.

Support patterns and time-lapses showed considerable variation by field and cluster. The percentage of civil engineers relying on university support, for example, was 20 points lower than that of chemical engineers; the parallel percentage of clinical psychologists was 16 points lower than that of other psychologists. It was also seen that the lengthening of total time-to-degree completion does not inevitably follow an upward trend. In the 1960s, while registered time-to-degree increased modestly, total time-lapse declined, perhaps because of the external labor market pull coupled with federal investment during that period. Since 1971, an upward slope in time-lapse has developed, both in registered and total time, but the slope of total time-lapse has been much steeper.

Trends in postgraduation plans also invited comparisons. Agricultural and health scientists were quite unlike the biological scientists, with whom they are usually grouped. For example, they were much more likely than bioscientists not only to be self-supporting in graduate school but also to plan employment, especially academic employment, following graduation. Another interesting finding had to do with similarities in three clusters involving chemistry-related programs (chemistry, biochemistry, and chemical engineering). Recipients in these clusters were comparable in that they evidenced relatively high percentages of Ph.D.s opting for study appointments, and they had relatively high percentages of recipients with definite plans.

APPENDIXES

APPENDIX A: The Five Basic Tables

Table titles and headings are generally self-explanatory, but a few terms need special definition or explanation. The survey questionnaire is reproduced on pages 80-82.

Table 1	Number of Doctorate Recipients, by Sex and Subfield, 1986
Table 1A	Number of Doctorate Recipients, by Citizenship, Racial/Ethnic Group, and Subfield, 1986
Table 2	Statistical Profile of Doctorate Recipients, by Field of Doctorate, 1986
Table 3	Sources of Support in Graduate School of Doctorate Recipient, by Sex and Summary Field, 1986
Table 4	State of Doctoral Institution of Doctorate Recipients, by Sex and Summary Field, 1986
Table 5	Statistical Profile of Doctorate Recipients, by Racial/Ethnic Group and Citizenship Status, 1986

Tables 1 and 1A: These tables display 1986 data by subfield of doctorate, corresponding to the fields specified in the Specialties List on page 82. The "general" field categories--e.g., "chemistry, general"--contain individuals who either received the doctorate in the general subject area or did not indicate a particular specialty field. The "other" field categories--e.g., "chemistry, other"--include individuals whose specified doctoral discipline was not included among the specialty fields.

Table 2: There are three 2-page tables: one contains data about all doctorate recipients in 1986 and the other two present data by sex. Refer to the inside of the back cover of this report for the codes included in each broad field and to the Specialties List on page 82 for the codes and names of each subfield. Definitions are as follows:

- *Median Age at Doctorate*: One-half received the doctorate at or before this age.
- *Percentage with Master's:* The percentage of doctorate recipients in a field who received a master's degree in any field before earning the doctorate.
- *Median Time Lapse:* "Total Time" refers to total calendar time elapsed between the year of baccalaureate and the year of doctorate; "Registered Time" refers to the total time registered in a university between baccalaureate and doctorate.

Each year's doctorate recipients provide information on postgraduation employment or study plans in response to items 19 and 20 on the survey form. Since the questionnaire is filled out at about the time the doctorate is received, these planned activities can be subject to change. However, comparisons with data from the longitudinal Survey of Doctorate Recipients have shown these data to be a reasonable predictor of actual employment status in the year following the doctorate.[8] Postgraduation plans of the doctorate recipients are grouped as follows: "Postdoctoral Study Plans" (fellowship, research associateship, traineeship, other), "Planned Employment" (educational institution, industry, etc.), or "Postdoctoral Status Unknown." The sum of these lines totals 100 percent for each column, with allowance for rounding: for example, 47.2 percent of all chemists had postdoctoral study plans, 44.7 percent planned to be employed, and 8.1 percent did not report their postgraduation plans; these total 100.0 percent. The study and employment rows are further subdivided--showing that 21.8 percent of all the chemists planned to pursue postdoctoral fellowships; 23.8 percent, research associateships; 0.6 percent, traineeships; and 1.1 percent, some other form of postdoctoral study. The employment row is similarly subdivided; the percentages, listed by type of employer, show that a total of 44.7 percent planned employment.

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[8] See discussion on page 22 of *Summary Report 1982* and also Lindsey R. Harmon, *A Century of Doctorates: Data Analyses of Growth and Change*, Washington, D.C.: National Academy of Sciences, 1978, pp. 92-93.

The four lines of data beginning with "Definite Postdoctoral Study" distinguish between individuals who have definite postgraduation plans (item 19: "Am returning to, or continuing in, predoctoral employment" or "Have signed contract or made definite commitment") and those who are still seeking employment or postdoctoral study (item 19: "Am negotiating with one or more specific organizations," "Am seeking position but have no specific prospects," or "Other"). These four lines, when added to the prior line, "Postdoctoral Status Unknown," total 100 percent with allowance for rounding. The two lines, "Definite Postdoctoral Study" and "Seeking Postdoctoral Study," add to give the percentage having "Postdoctoral Study Plans"; the two lines, "Definite Employment" and "Seeking Employment," add to give the percentage having "Planned Employment After Doctorate."

Percentages showing the distribution of doctorate recipients by work activity and by region of employment are based on those who have a definite employment commitment. They exclude those still seeking employment and those planning postdoctoral study as described above.

Table 3: Displayed in Table 3 are data reported from item 17 on all sources of financial support during the course of the individuals' graduate education. These data should be interpreted as follows: 166 male doctorate recipients in the physical sciences reported financial support from National Science Foundation fellowships during graduate school. This number is 4.4 percent of the male physical sciences doctorates who answered the question, and it is 39.2 percent of the males in all fields who reported NSF fellowship support. Since students indicate multiple sources of support, the vertical percentages sum to more than 100 percent.

Table 4: This table shows the number of persons receiving a doctorate from universities in each of the 50 states, the District of Columbia, and Puerto Rico.

Table 5: Table 5 contains data by racial/ethnic group (first included in *Summary Report 1973*) and by citizenship status for selected variables from Tables 2 and 3.

In 1977 the item on racial/ethnic group in the survey questionnaire was revised to coincide with the question format recommended by the Federal Interagency Committee on Education and adopted by the Office of Management and Budget (OMB) for use in federally sponsored surveys; an explanation of the effect of these changes is detailed on page 13 of *Summary Report 1977*. Changes in the OMB guidelines prompted the moving of persons having origins in the Indian subcontinent from the white category to Asian in 1978. In 1980, two survey revisions were made: (1) the category Hispanic was subdivided into Puerto Rican, Mexican American, and "other" Hispanic to provide more detail for users of the racial/ethnic data, and (2) respondents were asked to check only one racial category. (Prior to 1980, doctorate recipients could check more than one category to indicate their race. However, when the data were compiled, all persons who checked Asian, American Indian, or Hispanic and also checked white were included in the minority-group category; and those whose responses were black as well as any other category were designated as black.)

Beginning with the 1982 survey, this item was revised to separate questions on racial and ethnic groups. Respondents are first asked to check one of the four racial group categories (American Indian, Asian, black, or white) and then to indicate Hispanic heritage. For purposes of analysis all respondents who indicated Hispanic heritage, regardless of racial identification, are included in one of three Hispanic groups. The remaining survey respondents are then counted in the respective racial groups.

APPENDIX A, TABLE 1   Number of Doctorate Recipients, by Sex and Subfield, 1986

Subfield of Doctorate	Number of Doctorates		
	Men	Women	Total
TOTAL ALL FIELDS	20526	11244	31770
PHYSICAL SCIENCES	4033	775	4808
MATHEMATICS	609	121	730
Applied Mathematics	116	20	136
Algebra	28	18	46
Analysis and Functional Analysis	70	11	81
Geometry	37	1	38
Logic	20	3	23
Number Theory	19	1	20
Probability and Math Statistics	114	27	141
Topology	28	6	34
Computing Theory and Practice	10	0	10
Operations Research	25	4	29
Mathematics, General	105	20	125
Mathematics, Other	37	10	47
COMPUTER SCIENCE	350	49	399
Computer Sciences	315	40	355
Information Sciences and Systems	35	9	44
PHYSICS AND ASTRONOMY	1078	109	1187
Astronomy	48	4	52
Astrophysics	52	5	57
Acoustics	13	2	15
Atomic and Molecular	64	6	70
Electron	2	0	2
Elementary Particles	136	11	147
Fluids	4	2	6
Nuclear Structure	81	8	89
Optics	49	9	58
Plasma	58	3	61
Polymer	8	3	11
Solid State	251	29	280
Physics, General	204	18	222
Physics, Other	108	9	117
CHEMISTRY	1507	396	1903
Analytical	211	46	257
Inorganic	198	62	260
Nuclear	16	2	18
Organic	414	96	510
Pharmaceutical	41	17	58
Physical	222	71	293
Polymer	60	12	72
Theoretical	35	6	41
Chemistry, General	238	52	290
Chemistry, Other	72	32	104
EARTH, ATMOSPHERIC AND MARINE SCI	489	100	589
Atmospheric Physics and Chemistry	18	3	21
Atmospheric Dynamics	14	2	16
Meteorology	25	2	27
Atmos and Meteorological Sci, Gen	7	0	7
Atmos and Meteorological Sci, Other	6	1	7
Geology	95	23	118
Geochemistry	30	7	37
Geophysics and Seismology	71	18	89
Paleontology	9	7	16
Mineralogy, Petrology	13	4	17
Stratigraphy, Sedimentation	14	0	14
Geomorphology and Glacial Geology	9	2	11
Applied Geology	3	1	4
Geological Sciences, General	11	1	12
Geological Sciences, Other	8	4	12
Environmental Sciences	27	8	35
Hydrology and Water Resources	15	1	16
Oceanography	70	8	78
Marine Sciences	19	3	22
Physical Sciences, Other	25	5	30
ENGINEERING	3151	225	3376
Aerospace, Aeronaut & Astronaut	117	1	118
Agricultural	51	1	52
Bioengineering and Biomedical	58	9	67
Ceramic	22	3	25
Chemical	423	53	476
Civil	368	19	387
Communications	23	0	23
Computer	72	5	77
Electrical, Electronics	674	33	707
Engineering Mechanics	90	4	94
Engineering Physics	13	0	13
Engineering Science	27	3	30
Environmental Health Engineering	40	2	42
Industrial	87	14	101
Materials Science	169	18	187
Mechanical	428	14	442
Metallurgical	90	3	93
Mining and Mineral	20	2	22
Naval Architecture, Marine Eng	9	0	9
Nuclear	91	6	97
Ocean	14	0	14
Operations Research	43	11	54
Petroleum	17	1	18
Polymer	29	7	36
Systems Engineering	31	2	33
Engineering, General	30	5	35
Engineering, Other	95	9	104
LIFE SCIENCES	3777	1943	5720
BIOLOGICAL SCIENCES	2515	1276	3791
Biochemistry	377	194	571
Biophysics	59	13	72
Bacteriology	10	2	12
Plant Genetics	9	10	19
Plant Pathology	23	5	28
Plant Physiology	34	17	51
Botany, Other	79	42	121
Anatomy	58	27	85
Biometrics and Biostatistics	20	10	30
Cell Biology	86	44	130
Ecology	143	40	183
Embryology	2	7	9
Endocrinology	11	6	17
Entomology	148	22	170
Immunology	95	51	146
Molecular Biology	183	114	297
Microbiology	207	118	325
Neurosciences	81	39	120
Nutritional Sciences	36	86	122
Parasitology	22	3	25
Toxicology	71	33	104
Human and Animal Genetics	50	41	91
Human and Animal Pathology	58	33	91
Human and Animal Pharmacology	161	79	240
Human and Animal Physiology	162	76	238
Zoology, Other	111	44	155
Biological Sciences, General	140	73	213
Biological Sciences, Other	79	47	126
HEALTH SCIENCES	293	479	772
Audiology and Speech Pathology	23	59	82
Environmental Health	27	12	39
Public Health	40	63	103
Epidemiology	30	51	81
Nursing	2	213	215
Pharmacy	81	25	106
Veterinary Medicine	28	13	41
Health Sciences, General	20	8	28
Health Sciences, Other	42	35	77
AGRICULTURAL SCIENCES	969	188	1157
Agricultural Economics	142	16	158
Animal Breeding and Genetics	21	4	25
Animal Nutrition	52	13	65
Animal Sciences, Other	75	16	91
Agronomy	144	15	159
Plant Breeding and Genetics	65	13	78
Plant Pathology	71	14	85
Plant Sciences, Other	17	5	22
Food Sciences	81	40	121
Soil Sciences	93	10	103
Horticulture Science	49	12	61
Fisheries Science	23	9	32
Wildlife Management	18	2	20
Forestry Science	71	17	88
Agriculture, General	4	0	4
Agriculture, Other	43	2	45

APPENDIX A, TABLE 1 (Continued)

Subfield of Doctorate	Number of Doctorates		
	Men	Women	Total
SOCIAL SCIENCES (INCL PSYCH)	3362	2479	5841
Anthropology	184	197	381
Area Studies	22	6	28
Criminology	17	7	24
Demography	9	6	15
Economics	672	164	836
Econometrics	23	2	25
Geography	81	39	120
International Relations	61	15	76
Political Science and Government	297	117	414
Public Policy Studies	46	34	80
Sociology	276	216	492
Statistics	48	17	65
Urban Studies	34	16	50
Social Sciences, General	23	13	36
Social Sciences, Other	62	66	128
PSYCHOLOGY	1507	1564	3071
Clinical	564	580	1144
Cognitive	37	33	70
Comparative	8	6	14
Counseling	212	236	448
Developmental	66	116	182
Experimental	83	64	147
Educational	49	58	107
Industrial and Organizational	58	51	109
Personality	7	9	16
Physiological	43	30	73
Psychometrics	4	7	11
Quantitative	15	8	23
School	57	59	116
Social	62	79	141
Psychology, General	149	145	294
Psychology, Other	93	83	176
HUMANITIES	1898	1563	3461
History, American	128	68	196
History, European	77	44	121
History of Science	14	10	24
History, General	60	24	84
History, Other	100	38	138
Classics	36	15	51
Comparative Literature	39	62	101
Linguistics	93	96	189
Speech and Debate	19	11	30
Letters, General	5	14	19
Letters, Other	16	21	37
American Studies	30	38	68
Archeology	14	14	28
Art History and Criticism	34	92	126
Music	305	171	476
Philosophy	198	50	248
Religion	147	33	180
Theatre	48	39	87
LANGUAGE AND LITERATURE	490	676	1166
American	93	122	215
English	207	299	506
French	26	76	102
German	35	44	79
Italian	8	7	15
Spanish	48	74	122
Russian	14	14	28
Slavic	6	2	8
Chinese	8	5	13
Japanese	2	7	9
Hebrew	7	4	11
Arabic	7	2	9
Other Languages	29	20	49
Humanities, General	12	11	23
Humanities, Other	31	38	69

Subfield of Doctorate	Number of Doctorates		
	Men	Women	Total
PROFESSIONAL FIELDS	1277	659	1936
BUSINESS ADMINISTRATION	694	207	901
Accounting	104	33	137
Banking and Finance	115	11	126
Business Admin and Management	178	46	224
Business Economics	23	5	28
Marketing Management and Research	79	31	110
Business Statistics	3	0	3
Operations Research	42	4	46
Organizational Behavior	35	21	56
Business and Management, General	43	12	55
Business and Management, Other	72	24	96
COMMUNICATIONS	147	111	258
Communications Research	46	33	79
Journalism	16	2	18
Radio and Television	8	5	13
Communications, General	40	35	75
Communications, Other	37	36	73
OTHER PROFESSIONAL FIELDS	436	341	777
Architecture, Environmental Design	23	4	27
Home Economics	15	73	88
Law	29	2	31
Library and Archival Science	22	35	57
Public Administration	55	30	85
Social Work	81	150	231
Theology	195	33	228
Professional Fields, General	0	0	0
Professional Fields, Other	16	14	30
EDUCATION	3012	3590	6602
Curriculum and Instruction	302	485	787
Educational Admin and Supervision	874	748	1622
Educational Media	39	40	79
Educational Statistics and Research	21	36	57
Educational Testing, Eval and Meas	20	27	47
Educational Psychology	131	192	323
School Psychology	37	55	92
Social Foundations	62	60	122
Special Education	76	197	273
Student Counseling, Personnel Serv	150	165	315
Higher Education	301	308	609
Pre-elementary Education	15	69	84
Elementary Education	23	71	94
Junior High Education	1	0	1
Secondary Education	41	45	86
Adult and Continuing Education	100	123	223
TEACHING FIELDS	549	592	1141
Agricultural Education	35	4	39
Art Education	19	24	43
Business Education	21	29	50
English Education	26	53	79
Foreign Languages Education	12	24	36
Health Education	26	55	81
Home Economics Education	0	17	17
Industrial Arts Education	20	0	20
Mathematics Education	39	33	72
Music Education	62	32	94
Nursing Education	3	37	40
Physical Education	130	80	210
Reading Education	22	112	134
Science Education	43	22	65
Social Science Education	15	7	22
Speech Education	2	3	5
Trade and Industrial Education	50	36	86
Other Teaching Fields	24	24	48
Education, General	163	189	352
Education, Other	107	188	295
OTHER AND UNSPECIFIED	18	8	26

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX A, TABLE 1A Number of Doctorate Recipients, by Citizenship, Racial/Ethnic Group, and Subfield, 1986

Subfield of Doctorate	Total Doctorates	Non-U.S. Citizens Temp. Visas	U.S. Citizens and Non-U.S. with Permanent Visas								
				Racial/Ethnic Group 1/							
			Total	Amer. Ind.	Asian	Black	White	Puerto Rican	Mex-ican Amer.	Other His-panic	Other & Unk
TOTAL ALL FIELDS	31770 2/	5267	24406	99	1050	946	21130	137	193	344	307
PHYSICAL SCIENCES	4808	1258	3243	8	225	33	2804	15	15	34	109
MATHEMATICS	730	272	403	1	28	6	344	3	3	6	12
Applied Mathematics	136	48	82	1	3	3	65	3	1	1	5
Algebra	46	22	24		2		17			2	3
Analysis and Functional Analysis	81	33	48		4		43				1
Geometry	38	14	24		1		21			1	1
Logic	23	6	17				17				
Number Theory	20	5	15				15				
Probability and Math Statistics	141	53	81		3	1	74			2	1
Topology	34	13	21		1		20				
Computing Theory and Practice	10	5	5				5				
Operations Research	29	11	17		5		11				1
Mathematics, General	125	41	45		7	1	35		2		
Mathematics, Other	47	21	24		2	1	21				
COMPUTER SCIENCE	399	122	250		37	1	193	2		5	12
Computer Sciences	355	111	221		33	1	171	1		5	10
Information Sciences and Systems	44	11	29		4		22	1			2
PHYSICS AND ASTRONOMY	1187	365	732		37	8	648	4	2	9	24
Astronomy	52	7	45		3		38			1	3
Astrophysics	57	10	46		3		41			1	1
Acoustics	15	3	12				11				1
Atomic and Molecular	70	23	47		1	3	40	1			2
Electron	2	1	1				1				
Elementary Particles	147	49	97		3	2	86			3	3
Fluids	6	3	3		1		2				
Nuclear Structure	89	35	54		3		50				1
Optics	58	12	42		1		37	1	2	1	
Plasma	61	13	45		2	1	39				3
Polymer	11	4	7		1		6				
Solid State	280	110	169		9	1	154			2	3
Physics, General	222	70	81		7	1	65	1		1	6
Physics, Other	117	25	83		3		78	1			1
CHEMISTRY	1903	393	1412	5	109	17	1206	5	10	10	50
Analytical	257	43	214	1	8	6	194		3	1	3
Inorganic	260	43	215		7	1	194		2	3	8
Nuclear	18	3	15				13				2
Organic	510	89	417	1	37	2	353	2	4	2	16
Pharmaceutical	58	10	48		10		36				2
Physical	293	56	236	1	17	3	205	2		3	5
Polymer	72	18	54		10	3	39				2
Theoretical	61	11	30		3		26				1
Chemistry, General	290	96	110	2	8	3	83	1	1	1	11
Chemistry, Other	104	24	73		9	1	63				
EARTH, ATMOSPHERIC AND MARINE SCI	589	106	446	2	14	1	413	1		4	11
Atmospheric Physics and Chemistry	21	3	16		1		15				
Atmospheric Dynamics	16	6	9				9				
Meteorology	27	12	15		2		13				
Atmos and Meteorological Sci, Gen	7	1	6		1		5				
Atmos and Meteorological Sci, Other	7	2	5				5				
Geology	118	8	100		1		96				3
Geochemistry	37	6	30		2		26				2
Geophysics and Seismology	89	22	57	1	3		51			2	
Paleontology	16	4	12				12				
Mineralogy, Petrology	17	2	15				15				
Stratigraphy, Sedimentation	14	1	13				13				
Geomorphology and Glacial Geology	11	2	9				9				
Applied Geology	4		4				4				
Geological Sciences, General	12	2	7				6				1
Geological Sciences, Other	12	1	11				11				
Environmental Sciences	35	4	30	1	1		28				
Hydrology and Water Resources	16	1	12		1		10				1
Oceanography	78	17	57		2		51	1		1	2
Marine Sciences	22	3	19				18				1
Physical Sciences, Other	30	9	19			1	16			1	1
ENGINEERING	3376	1369	1722	6	262	24	1349	11	5	19	46
Aerospace, Aeronaut & Astronaut	118	60	45		3		40			1	1
Agricultural	52	22	28		1		25				2
Bioengineering and Biomedical	67	8	52	1	5		43	1		1	1
Ceramic	25	9	15				15				
Chemical	476	175	270		56	3	204	2	1	1	5

1/ For an explanation of racial/ethnic groups see items 9 and 10 on questionnaire on page 80 and description on page 41.
2/ Includes 2,097 individuals who did not report their citizenship at time of doctorate.

APPENDIX A, TABLE 1A (Continued)

			U.S. Citizens and Non-U.S. with Permanent Visas								
				Racial/Ethnic Group 1/							
Subfield of Doctorate	Total Doctorates	Non-U.S. Citizens Temp. Visas	Total	Amer. Ind.	Asian	Black	White	Puerto Rican	Mex-ican Amer.	Other His-panic	Other & Unk
Civil	387	189	167		20	3	134	1	1	5	3
Communications	23	8	12		3		9				
Computer	77	37	37		7		30				
Electrical, Electronics	707	275	361	2	61	4	280	4	1	4	5
Engineering Mechanics	94	42	48		4	1	38			2	3
Engineering Physics	13	1	12		2		10				
Engineering Science	30	7	21	1	3	1	15				1
Environmental Health Engineering	42	10	25		6	1	18				
Industrial	101	52	47		9		38				
Materials Science	187	74	101		19	2	74			2	4
Mechanical	442	189	218	2	27	2	171		2	2	12
Metallurgical	93	53	36		11	1	24				
Mining and Mineral	22	12	9				8				1
Naval Architecture, Marine Eng	9	2	7				6				1
Nuclear	97	42	45		7	3	34				1
Ocean	14	4	9				8				1
Operations Research	54	16	34		5		28				1
Petroleum	18	8	8		2	1	5				
Polymer	36	15	20		2		17				1
Systems Engineering	33	14	18		2		14	1		1	
Engineering, General	55	18	23		3		18				2
Engineering, Other	104	27	54		6	2	43	2			1
LIFE SCIENCES	5720	870	4546	23	219	85	4040	20	16	61	82
BIOLOGICAL SCIENCES	3791	391	3234	17	165	48	2883	12	9	45	55
Biochemistry	571	72	477	2	29	6	418	1	1	11	9
Biophysics	72	11	58		2		50		1	2	3
Bacteriology	12	2	10		1	1	8				
Plant Genetics	19	3	16		1		15				
Plant Pathology	28	6	21		2		18			1	
Plant Physiology	51	6	45		2	1	40	1		1	
Botany, Other	121	10	104	1	6		95			1	1
Anatomy	85	9	71		2		69				
Biometrics and Biostatistics	30	9	21				20				1
Cell Biology	130	9	114	1	4	4	99	2		2	2
Ecology	183	23	157		2	1	151	1	1		1
Embryology	9		9				9				
Endocrinology	17	3	13		2		10		1		
Entomology	170	21	135	1	1	3	124	2		2	2
Immunology	146	12	129	2	11		111	1		3	1
Molecular Biology	297	28	267		20	1	237	1		4	4
Microbiology	325	40	274	1	16	6	240	1	2	5	3
Neurosciences	120	7	112	2	3		101			1	5
Nutritional Sciences	122	17	100		9	5	80		1	2	3
Parasitology	25	4	20		1		19				
Toxicology	104	4	100	2	3		94				1
Human and Animal Genetics	91	5	84		4		76			2	2
Human and Animal Pathology	91	9	78		6	4	66			1	1
Human and Animal Pharmacology	240	13	216	1	16	5	184	1	2	2	5
Human and Animal Physiology	238	19	211	1	9	2	193			2	4
Zoology, Other	155	13	132		2	1	127	1			1
Biological Sciences, General	213	27	153	3	5	4	134			2	5
Biological Sciences, Other	126	9	107		6	4	95			1	1
HEALTH SCIENCES	772	99	601	6	29	21	523	4	3	5	10
Audiology and Speech Pathology	82	3	76		2	4	67			1	2
Environmental Health	39	5	34		3		29	1			1
Public Health	103	21	74	3	4	4	59	2	1	1	
Epidemiology	81	8	65		5	1	58			1	
Nursing	215	7	194	3	2	8	177		1	1	2
Pharmacy	106	32	57		9	1	44			1	2
Veterinary Medicine	41	12	29		1	1	24	1			2
Health Sciences, General	28	1	13		2		11				
Health Sciences, Other	77	10	59		1	2	54		1		1
AGRICULTURAL SCIENCES	1157	380	711		25	16	634	4	4	11	17
Agricultural Economics	158	60	84		3		77			2	2
Animal Breeding and Genetics	25	10	15				13		1		1
Animal Nutrition	65	16	49		1	1	46				1
Animal Sciences, Other	91	24	60		2	1	54	2		1	
Agronomy	159	56	89			1	85	1		1	1
Plant Breeding and Genetics	78	33	45		1	1	41				2
Plant Pathology	85	27	55		2	3	47			1	2
Plant Sciences, Other	22	7	15				15				
Food Sciences	121	54	62		9	2	47	1		2	1
Soil Sciences	103	36	65		4	2	54		1	1	3
Horticulture Science	61	15	40			2	35		1	1	1
Fisheries Science	32	7	22			1	19			1	1
Wildlife Management	20	2	17				17				
Forestry Science	88	24	60		2		55		1		2
Agriculture, General	4	2	2				2				
Agriculture, Other	45	7	31		1	2	27			1	

APPENDIX A, TABLE 1A (Continued)

			U.S. Citizens and Non-U.S. with Permanent Visas								
							Racial/Ethnic Group 1/				
Subfield of Doctorate	Total Doctorates	Non-U.S. Citizens Temp. Visas	Total	Amer. Ind.	Asian	Black	White	Puerto Rican	Mex-ican Amer.	Other His-panic	Other & Unk
SOCIAL SCIENCES (INCL PSYCH)	5841	672	4768	20	121	191	4191	27	46	77	95
Anthropology	381	29	329	2	5	4	295	2	3	9	9
Area Studies	28	9	10		1	2	7				
Criminology	24		24	1		2	21				
Demography	15	5	10			1	9				
Economics	836	260	519	2	28	15	450	1	2	3	18
Econometrics	25	11	14		2	1	11				
Geography	120	34	78		5		71			1	1
International Relations	76	21	51		4	3	40			2	2
Political Science and Government	414	72	295		11	17	246	2	3	6	10
Public Policy Studies	80	12	67		2	7	55		1	1	1
Sociology	492	68	396	4	11	25	330	3	4	7	12
Statistics	65	27	30		6		23			1	
Urban Studies	50	14	30		1	1	23	1	1		3
Social Sciences, General	36	7	22				19			2	1
Social Sciences, Other	128	23	97	2	5	5	75	2	4	1	3
PSYCHOLOGY	3071	80	2796	9	40	108	2516	16	28	44	35
Clinical	1144	13	1073	7	22	53	934	10	12	23	12
Cognitive	70	4	66		2	1	60			1	2
Comparative	14		14				14				
Counseling	448	9	427		2	17	400	1		6	1
Developmental	182	10	171		3		161	1	2	3	1
Experimental	147	11	136		2	1	128	1	2		2
Educational	107	2	95			1	91		2		1
Industrial and Organizational	109	2	107	1	1	4	99		1	1	
Personality	16		16			1	14			1	
Physiological	73	1	72		1		65		1	1	4
Psychometrics	11		11				11				
Quantitative	23	1	22				21		1		
School	116	1	108			4	102		1		1
Social	141	11	129		2	11	110	1	1	3	1
Psychology, General	294	9	192	1	2	12	162		3	3	9
Psychology, Other	176	6	157		3	3	144	2	2	2	1
HUMANITIES	3461	323	2881	7	51	80	2581	14	24	61	63
History, American	196	8	188		2	10	167		3	1	5
History, European	121	4	117	1			114				2
History of Science	24	6	17			1	14			2	
History, General	84	13	46		1	1	37			2	5
History, Other	138	18	120		3	6	106		1	3	1
Classics	51	2	46				46				
Comparative Literature	101	13	83		2	2	72	1	1	4	1
Linguistics	189	60	115	1	6	4	96	3	1	1	3
Speech and Debate	30	2	26				26				
Letters, General	19		19		1	1	17				
Letters, Other	37	1	36			1	33		1	1	
American Studies	68	7	60		1	8	49			1	1
Archeology	28	1	27		1	1	25				
Art History and Criticism	126	4	117		1	1	114				1
Music	476	30	378	1	7	11	347		2	3	7
Philosophy	248	20	213		2	4	200	1		2	4
Religion	180	11	159	1	5	4	143		1	2	3
Theatre	87	6	77	1		5	69				2
LANGUAGE AND LITERATURE	1166	114	965	2	19	18	839	9	14	39	25
American	215	16	199		1	6	188		1	1	2
English	506	32	428	2	11	6	392	1	5		11
French	102	13	83			5	74			3	1
German	79	9	65				62				3
Italian	15	6	9				9				
Spanish	122	18	97				42	8	8	34	5
Russian	28	3	25				24				1
Slavic	8	1	6				6				
Chinese	13	2	10		3		7				
Japanese	9	2	6		3		3				
Hebrew	11	1	4				4				
Arabic	9	5	4				4				
Other Languages	49	6	29		1	1	24			1	2
Humanities, General	23	1	21			1	20				
Humanities, Other	69	2	51			1	47				3

1/ For an explanation of racial/ethnic groups see items 9 and 10 on questionnaire on page 80 and description on page 41.

APPENDIX A, TABLE 1A (Continued)

Subfield of Doctorate	Total Doctorates	Non-U.S. Citizens Temp. Visas	U.S. Citizens and Non-U.S. with Permanent Visas								
				Racial/Ethnic Group 1/							
			Total	Amer. Ind.	Asian	Black	White	Puerto Rican	Mex-ican Amer.	Other His-panic	Other & Unk
PROFESSIONAL FIELDS	1936	302	1465	9	80	70	1260	5	7	15	19
BUSINESS ADMINISTRATION	901	205	618	3	56	19	521	1	1	7	10
Accounting	157	29	126		6	4	116				
Banking and Finance	126	42	83		15	2	63			1	2
Business Admin and Management	224	45	119		9	1	103		1	4	1
Business Economics	28	8	19		1	2	16				
Marketing Management and Research	110	26	84	2	6	1	74				1
Business Statistics	3		3		1		1				1
Operations Research	46	20	25		6	1	17				1
Organizational Behavior	56	8	48	1	1	2	43				1
Business and Management, General	35	8	35		5	3	26			1	
Business and Management, Other	96	19	76		6	3	62	1		1	3
COMMUNICATIONS	258	34	212	3	5	16	182		1	2	3
Communications Research	79	11	68	1		2	62		1		2
Journalism	18	7	11		2		9				
Radio and Television	13	1	12			2	10				
Communications, General	75	5	62	2	3	7	49			1	
Communications, Other	73	10	59			5	52			1	1
OTHER PROFESSIONAL FIELDS	777	63	635	3	19	35	557	4	5	6	6
Architecture, Environmental Design	27	7	18		3		13	1			1
Home Economics	88	3	83		1	3	79				
Law	31	7	7				6				1
Library and Archival Science	57	7	46	1		2	40	1	1	1	
Public Administration	85	11	69		4	7	57	1			
Social Work	231	6	198	2	5	19	165	1	3	1	2
Theology	228	18	192		6	2	177		1	4	2
Professional Fields, General											
Professional Fields, Other	30	4	22			2	20				
EDUCATION	6602	468	5763	26	91	462	4889	45	80	77	93
Curriculum and Instruction	787	65	703	2	14	36	587	11	28	9	16
Educational Admin and Supervision	1622	70	1472	5	15	159	1242	6	12	17	16
Educational Media	79	13	66	1	1	4	59		1		
Educational Statistics and Research	57	3	54	1	2	4	43		2	2	
Educational Testing, Eval and Meas	47	10	37		2	1	30	1	2	1	
Educational Psychology	323	18	298	3	9	19	255	2	3	2	5
School Psychology	92		92			2	85		2		3
Social Foundations	122	19	97		3	14	68	3	2	3	4
Special Education	273	12	253	1	1	8	231	1	4	3	4
Student Counseling, Personnel Serv	315	9	293		5	22	254	4	2	4	2
Higher Education	609	37	550	4	7	49	474	2	5	5	4
Pre-elementary Education	84	5	68		1	4	56	1	2	2	2
Elementary Education	94	4	86	2	1	7	76				
Junior High Education	1										
Secondary Education	86	12	57		1	5	51				
Adult and Continuing Education	223	10	209	3	3	11	179	2		3	8
TEACHING FIELDS	1141	126	983	2	15	68	858	8	4	12	16
Agricultural Education	39	11	27			5	22				
Art Education	43	1	38			4	32	1		1	
Business Education	50	3	47		3	3	39			1	1
English Education	79	4	73		1	7	62				3
Foreign Languages Education	36	7	29			3	21	1	2	2	
Health Education	81	9	68		1	4	61	1			1
Home Economics Education	17	2	14				14				
Industrial Arts Education	20	3	17		1		16				
Mathematics Education	72	16	55		1	4	49			1	
Music Education	94	3	91		2	6	81			1	1
Nursing Education	40	2	38		2	3	33				
Physical Education	210	21	177	1	2	6	162			1	5
Reading Education	134	6	123	1		9	107	2		3	1
Science Education	65	13	52			4	46	1			1
Social Science Education	22	2	20		1	3	15	1			
Speech Education	5	1	4				4				
Trade and Industrial Education	86	14	71			6	62				3
Other Teaching Fields	48	8	39		1	1	32	1	2	2	
Education, General	352	26	194	2	5	27	137	1	6	6	10
Education, Other	295	29	251		6	22	204	3	5	8	3
OTHER AND UNSPECIFIED	26	5	18		1	1	16				

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX A, TABLE 2 Statistical Profile of Doctorate Recipients, by Field of Doctorate, 1986[1/]

Total All Doctorates

		1986 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Physical Sciences	Mathematics	Computer Sciences	Engineering	EMP Fields	Biochemistry	Other Biosciences	Biosciences	Health Sciences	Agricultural Sciences	Life Sciences
Number in Field		31770	1187	1903	589	3679	730	399	3376	8184	571	3220	3791	772	1157	5720
Male	%	64.6	90.8	79.2	83.0	83.6	83.4	87.7	93.3	87.8	66.0	66.4	66.3	38.0	83.8	66.0
Female		35.4	9.2	20.8	17.0	16.4	16.6	12.3	6.7	12.2	34.0	33.6	33.7	62.0	16.2	34.0
U.S. Citizenship	%	72.3	58.3	69.3	71.6	66.1	50.3	50.9	40.8	53.5	80.6	82.6	82.3	73.3	56.8	75.9
Non-U.S., Permanent Visa		4.5	3.4	4.9	4.1	4.3	4.9	11.8	10.2	7.1	3.0	3.0	3.0	4.5	4.7	3.6
Non-U.S., Temporary Visa		16.6	30.7	20.7	18.0	23.5	37.3	30.6	40.6	32.1	12.6	9.9	10.3	12.8	32.8	15.2
Unknown		6.6	7.6	5.1	6.3	6.1	7.5	6.8	8.4	7.2	3.9	4.5	4.4	9.3	5.7	5.3
Married	%	57.3	47.3	51.6	55.3	50.8	46.0	56.6	59.1	54.1	54.6	53.2	53.4	56.9	65.9	56.4
Not Married		34.5	44.7	41.3	36.7	41.7	45.5	35.8	31.0	37.3	40.5	40.9	40.8	31.7	26.5	36.7
Unknown		8.2	8.0	7.1	8.0	7.5	8.5	7.5	9.8	8.6	4.9	6.0	5.8	11.4	7.5	6.9
Median Age at Doctorate		33.5	30.0	29.2	31.8	29.9	30.0	32.0	31.0	30.4	29.8	31.0	30.8	35.6	32.5	31.6
Percent with Bacc in Same Field as Doctorate		55.1	73.0	81.8	47.2	73.4	72.9	15.5	73.0	70.4	24.9	63.5	57.7	46.9	62.1	57.1
Percent with Masters		79.3	63.6	37.5	75.9	52.1	73.2	84.5	86.5	69.7	32.7	55.1	51.7	81.3	91.0	63.7
Median Time Lapse From Bacc to Doct																
Total Time	Yrs	10.4	7.3	6.5	9.0	7.1	7.3	9.1	8.1	7.6	7.3	8.2	8.1	11.9	9.2	8.7
Registered Time		6.8	6.3	5.5	6.9	6.0	6.0	6.5	5.9	5.9	6.0	6.5	6.4	6.9	6.0	6.4
Postdoctoral Study Plans	%	22.0	51.7	47.2	36.0	46.9	23.7	11.3	19.2	31.7	78.5	66.1	68.0	15.4	23.3	51.9
Fellowship		10.3	15.2	21.8	14.6	18.5	9.6	2.8	4.5	11.2	46.8	37.8	39.2	6.6	6.3	28.1
Research Assoc		9.3	35.5	23.8	20.4	27.0	11.8	7.0	12.5	18.7	25.6	21.5	22.1	6.2	14.8	18.5
Traineeship		1.1	0.8	0.6	0.7	0.7	1.5	1.0	1.8	1.2	1.1	1.8	1.7	0.6	1.4	1.5
Other Study		1.4	0.3	1.1	0.3	0.7	0.8	0.5	0.4	0.6	5.1	5.0	5.0	1.9	0.9	3.8
Planned Employment After Doctorate	%	69.0	37.8	44.7	55.5	44.2	66.8	79.2	69.3	58.3	15.1	27.9	25.9	72.8	66.6	40.5
Educ Institution [2/]		40.1	10.4	7.4	23.3	10.9	48.5	40.6	25.0	21.5	5.6	13.4	12.2	43.9	34.7	21.0
Industry/Business		14.0	18.5	33.4	17.1	26.0	13.0	31.6	34.0	28.4	6.8	6.9	6.9	11.1	13.8	8.9
Government		7.1	6.3	2.0	11.7	4.9	2.7	4.0	6.8	5.5	1.6	4.4	4.0	7.9	13.0	6.3
Nonprofit		4.5	1.0	0.7	1.2	0.9	0.8	1.3	1.1	1.0	0.7	1.5	1.4	7.0	1.2	2.1
Other & Unknown		3.3	1.5	1.2	2.2	1.5	1.8	1.8	2.5	1.9	0.4	1.6	1.4	2.8	3.9	2.1
Postdoc Status Unknown	%	9.0	10.4	8.1	8.5	8.9	9.5	9.5	11.5	10.1	6.5	6.0	6.1	11.8	10.1	7.7
Definite Postdoctoral Study		16.0	38.5	36.7	24.8	35.4	15.8	7.5	11.5	22.4	68.0	52.3	54.6	11.1	15.7	40.9
Seeking Postdoctoral Study		6.1	13.2	10.5	11.2	11.5	7.9	3.8	7.7	9.2	10.5	13.9	13.4	4.3	7.6	11.0
Definite Employment		50.4	28.1	34.9	38.9	33.4	51.0	59.1	49.3	42.8	9.8	18.7	17.4	55.6	48.4	28.8
Seeking Employment		18.6	9.7	9.8	16.6	10.8	15.9	20.1	20.0	15.5	5.3	9.1	8.5	17.2	18.2	11.7
Employment Activity After Doctorate																
Primary Activity																
R & D	%	27.4	67.7	81.8	58.1	73.5	43.8	62.7	62.3	64.3	57.1	47.9	48.7	32.9	55.9	47.0
Teaching		36.7	20.1	10.7	24.0	15.7	43.8	26.3	22.0	22.4	23.2	26.5	26.3	39.6	21.4	28.1
Administration		13.8	1.2	1.4	3.5	1.7	1.1	2.5	1.7	1.7	3.6	4.0	3.9	9.3	2.3	4.8
Prof. Services		13.4	4.2	2.1	7.0	3.6	4.0	3.0	5.1	4.3	7.1	13.1	12.6	11.4	7.3	10.5
Other		3.0	3.0	1.1	5.2	2.4	0.8	3.0	2.4	2.3	3.6	3.6	3.6	2.8	5.0	3.9
Secondary Activity																
R & D		25.6	19.2	9.6	21.4	14.4	39.0	25.0	22.1	21.4	17.9	24.0	23.5	31.5	23.9	25.7
Teaching		14.1	7.2	3.2	21.0	7.6	25.8	23.3	14.5	13.9	10.7	15.6	15.2	19.6	22.0	18.6
Administration		9.3	9.3	16.6	7.0	12.8	1.6	4.7	7.8	8.7	19.6	13.3	13.8	10.0	8.6	11.0
Prof. Services		7.2	4.2	5.9	6.1	5.5	4.0	4.7	5.4	5.2	7.1	6.3	6.4	8.9	6.6	7.1
Other		2.1	2.4	0.6	1.7	1.3	1.3	1.3	1.1	1.2	0.0	1.3	1.2	0.7	1.4	1.2
No Secondary Activity		36.1	53.9	61.1	40.6	55.3	21.8	38.6	42.6	44.6	39.3	34.7	35.1	25.4	29.5	30.6
Activity(ies) Unknown		5.7	3.9	3.0	2.2	3.1	6.5	2.5	6.4	5.0	5.4	4.8	4.9	4.0	8.0	5.7
Region of Employment After Doctorate																
New England	%	6.6	6.9	7.7	5.7	7.1	10.5	5.9	5.7	6.7	5.4	5.1	5.2	5.6	3.2	4.6
Middle Atlantic		14.8	18.3	23.2	4.4	18.3	13.4	22.5	14.7	16.4	21.4	12.1	12.9	14.0	4.5	10.3
East No Central		14.1	6.9	20.2	10.0	14.7	15.3	16.9	14.4	14.7	10.7	14.4	14.1	16.8	8.9	13.0
West No Central		6.5	3.9	4.5	5.7	4.6	5.1	3.0	4.7	4.6	5.4	6.0	5.9	7.5	9.3	7.5
South Atlantic		14.8	14.4	13.9	12.7	13.8	12.9	8.9	11.1	12.1	14.3	17.6	17.3	14.2	13.8	15.3
East So Central		4.0	2.4	2.6	3.9	2.8	3.8	1.7	2.6	2.7	0.0	3.3	3.0	4.0	4.6	3.8
West So Central		7.8	4.8	7.8	18.3	9.0	5.9	6.8	7.8	7.9	8.9	6.8	7.0	12.1	7.0	8.3
Mountain		4.7	6.6	3.0	8.7	5.1	5.4	1.3	5.8	5.2	3.6	4.0	3.9	5.1	4.1	4.3
Pacific & Insular		10.2	20.4	7.4	14.4	12.2	10.5	16.9	12.8	12.6	12.5	11.4	11.5	6.5	8.2	9.1
Foreign		10.0	12.0	5.4	14.0	8.8	11.8	11.0	15.6	12.5	12.5	14.9	14.7	10.3	32.3	19.5
Region Unknown		6.4	3.6	4.4	2.2	3.7	5.4	5.1	4.9	4.5	5.4	4.3	4.4	4.0	4.1	4.2

[1/] Refer to explanatory note on pages 40-41 and the description of doctoral fields inside back cover.

[2/] Includes 2-year, 4-year, and foreign colleges and universities, medical schools, and elementary/secondary schools.

APPENDIX A, TABLE 2 (Continued)

Total All Doctorates

Psychology	Economics	Anthropology and Sociology	Political Sci.& Internat'l Rel.	Other Social Sciences	Social Sciences Inc. Psychology	Total Sciences	History	Eng. and Amer. Lang. and Lit.	Foreign Lang. and Lit.	Other Humanities	Humanities	Business and Management	Other Professional Fields	Education	Total Non-Sciences	Other or Unspecified 3/
3071	861	873	490	546	5841	19745	563	721	445	1732	3461	901	1035	6602	11999	26
49.1	80.7	52.7	73.1	62.6	57.6	72.5	67.3	41.6	42.7	59.3	54.8	77.0	56.3	45.6	51.5	69.2
50.9	19.3	47.3	26.9	37.4	42.4	27.5	32.7	58.4	57.3	40.7	45.2	23.0	43.7	54.4	48.5	30.8
89.0	55.1	78.4	64.5	62.3	77.9	67.2	82.6	84.2	64.9	78.9	78.8	61.4	79.2	84.7	80.8	
2.0	6.9	4.7	6.1	5.1	3.8	5.1	4.1	2.8	11.0	3.5	4.4	7.2	2.6	2.5	3.4	
2.6	31.5	11.1	19.0	24.0	11.5	21.1	8.7	6.7	14.8	9.2	9.3	22.8	9.4	7.1	9.1	
6.3	6.6	5.8	10.4	8.6	6.9	6.6	4.6	6.4	9.2	8.3	7.4	8.7	8.8	5.6	6.6	
51.2	55.7	57.2	54.3	61.2	53.9	54.7	60.4	54.0	51.9	54.5	55.0	66.5	56.9	65.1	61.6	
40.8	36.5	35.3	33.7	27.7	37.5	37.2	34.3	38.0	35.7	35.4	35.8	23.9	33.2	27.4	30.1	
8.0	7.8	7.6	12.0	11.2	8.6	8.1	5.3	8.0	12.4	10.1	9.2	9.7	9.9	7.5	8.4	
33.0	31.5	35.2	33.5	35.6	33.4	31.5	35.4	35.2	35.8	34.7	35.0	35.0	37.1	39.4	37.6	
63.9	59.7	54.8	53.7	21.2	57.0	62.6	65.7	69.1	51.2	53.0	58.2	34.4	23.6	39.0	42.9	
80.1	72.6	87.4	85.7	90.1	81.5	71.5	90.9	88.8	85.2	87.5	88.0	87.1	92.4	94.9	92.1	
9.7	8.4	11.5	10.5	12.1	10.0	8.6	12.3	12.2	12.2	12.0	12.1	11.9	13.7	15.7	14.2	
7.0	6.3	8.4	7.8	7.5	7.2	6.4	8.5	8.2	8.6	8.1	8.2	7.0	7.7	7.8	7.8	
18.4	6.0	18.3	7.1	10.4	14.9	32.6	10.8	5.8	9.7	7.5	8.0	2.3	3.2	3.7	4.8	
11.2	2.3	11.0	3.1	5.5	8.6	15.3	7.6	2.6	5.6	3.6	4.3	0.2	1.3	1.3	2.1	
3.1	1.9	4.4	2.2	3.7	3.1	14.0	1.6	1.2	1.3	1.6	1.5	0.9	1.0	1.6	1.5	
2.9	0.7	1.1	0.8	1.1	2.0	1.5	0.2	0.1	1.1	0.5	0.5	1.0	0.4	0.4	0.4	
1.2	1.2	1.8	1.0	0.2	1.2	1.7	1.4	1.8	1.6	1.8	1.7	0.2	0.6	0.4	0.8	
73.2	85.4	72.2	78.4	76.7	75.6	58.3	80.3	86.0	78.0	80.9	81.5	88.3	86.4	89.0	86.5	
24.3	54.7	49.3	49.4	44.1	36.5	25.8	56.7	74.9	65.8	60.4	63.5	73.7	53.0	63.9	63.6	
16.9	8.5	6.5	8.8	11.2	12.9	18.2	6.4	4.7	4.3	6.5	5.8	10.1	9.5	6.9	7.0	
11.2	14.5	5.8	10.8	10.4	10.8	7.3	6.4	1.1	0.7	2.5	2.6	2.2	7.4	9.6	6.9	
15.5	1.9	5.3	3.9	7.3	10.2	4.0	5.3	1.0	1.3	6.9	4.7	0.9	13.5	4.7	5.2	
5.4	5.8	5.3	5.5	3.7	5.3	3.0	5.5	4.3	5.8	4.6	4.9	1.4	2.9	3.8	3.9	
8.3	8.6	9.5	14.5	12.8	9.5	9.2	8.9	8.2	12.4	11.6	10.5	9.3	10.4	7.3	8.7	
13.5	3.7	11.0	3.1	6.2	10.1	24.1	6.2	3.3	4.9	3.8	4.2	1.3	1.6	1.9	2.5	
4.9	2.3	7.3	4.1	4.2	4.8	8.4	4.6	2.5	4.7	3.7	3.7	1.0	1.5	1.8	2.3	
53.3	67.7	46.4	53.9	54.4	54.5	42.2	51.7	56.4	51.7	52.1	52.9	75.1	67.4	67.3	63.7	
20.0	17.7	25.8	24.5	22.3	21.1	16.0	28.6	29.5	26.3	28.8	28.6	13.2	18.9	21.7	22.8	
15.2	43.4	28.9	18.6	25.6	23.4	45.2	8.9	4.2	3.9	8.4	7.0	28.4	8.6	5.3	8.0	
14.1	41.5	47.2	51.5	41.4	28.9	26.0	64.3	79.4	80.0	69.7	72.3	56.9	48.3	37.1	48.3	
5.2	2.9	7.2	8.7	11.4	5.9	3.9	10.0	5.7	5.2	6.0	6.4	5.8	14.3	36.7	24.7	
59.0	4.8	7.9	5.3	13.1	33.8	16.8	6.2	1.5	3.5	5.1	4.3	3.2	17.5	11.6	9.6	
3.2	1.9	3.0	7.6	3.4	3.3	3.0	5.5	3.7	3.0	6.1	5.1	1.8	5.4	2.0	3.0	
21.5	37.2	39.3	38.3	36.4	29.4	25.3	34.0	35.4	51.7	35.5	37.3	49.6	29.8	17.0	25.9	
15.0	22.3	13.8	11.0	13.8	15.7	15.5	9.3	5.9	6.5	9.3	8.2	25.6	16.2	11.7	12.5	
11.9	6.5	9.9	6.8	8.4	9.9	9.6	6.2	7.6	4.8	9.3	7.9	3.4	8.6	10.2	8.9	
7.7	2.9	4.7	3.8	7.4	6.1	5.9	3.4	3.2	1.7	5.2	4.0	3.2	7.9	11.3	8.5	
3.7	1.0	1.7	1.5	2.4	2.6	1.8	3.1	2.5	1.3	5.6	4.0	0.6	2.3	2.3	2.5	
37.0	24.5	24.7	30.3	26.6	31.6	36.9	38.8	39.8	29.6	30.2	33.6	13.6	29.4	40.2	35.3	
3.4	5.5	5.9	8.3	5.1	4.6	5.0	5.2	5.7	4.3	4.8	5.0	4.0	5.9	7.4	6.4	
8.1	8.1	9.1	9.8	4.7	8.1	6.8	9.6	7.6	10.0	7.4	8.1	6.4	4.2	6.0	6.4	
20.2	16.5	12.8	12.5	15.2	17.5	15.6	16.5	13.8	14.8	15.4	15.1	13.7	12.8	13.7	14.0	
14.6	13.4	16.3	11.0	14.5	14.3	14.2	12.4	15.5	10.9	13.6	13.5	15.2	13.8	13.8	13.8	
6.2	4.3	5.4	6.1	7.4	5.8	5.6	7.2	6.6	3.9	7.5	6.8	5.8	6.9	8.1	7.5	
14.9	19.7	10.9	22.3	15.2	15.9	14.2	14.4	10.8	15.7	13.4	13.3	14.6	15.3	16.6	15.5	
2.8	2.6	3.7	4.5	3.0	3.0	3.1	2.7	6.4	3.5	4.5	4.5	5.6	5.3	5.1	5.0	
7.6	4.3	6.4	5.3	4.4	6.3	7.4	5.5	7.9	6.1	6.2	6.4	10.8	9.6	8.4	8.2	
4.3	3.1	5.4	3.8	2.7	4.1	4.6	4.8	3.7	3.9	3.9	4.0	5.2	4.3	5.4	4.9	
11.2	6.2	11.9	7.6	9.1	9.9	10.9	10.0	10.3	15.2	11.2	11.3	11.2	9.7	8.5	9.5	
1.9	19.6	12.8	12.1	18.5	8.9	12.5	9.6	6.1	8.7	9.4	8.6	8.7	9.0	6.3	7.3	
8.1	2.4	5.2	4.9	5.4	6.2	5.1	7.2	11.3	7.4	7.4	8.2	2.8	9.2	8.3	7.9	

3/ Statistics are not presented for this group because too few records contained the specific data.

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX A, TABLE 2 Statistical Profile of Doctorate Recipients, by Field of Doctorate, 1986[1]

Doctorates: Men

		1986 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Physical Sciences	Mathematics	Computer Sciences	Engineering	EMP Fields	Biochemistry	Other Biosciences	Biosciences	Health Sciences	Agricultural Sciences	Life Sciences
Total Male		20526	1078	1507	489	3074	609	350	3151	7184	377	2138	2515	293	969	3777
Male as a Percent of Total Doctorates	%	64.6	90.8	79.2	83.0	83.6	83.4	87.7	93.3	87.8	66.0	66.4	66.3	38.0	83.8	66.0
U.S. Citizenship	%	66.2	59.0	69.2	70.3	65.8	48.9	47.1	39.4	51.9	81.4	81.3	81.4	53.9	54.6	72.4
Non-U.S., Permanent Visa		5.2	3.2	4.0	4.3	3.7	5.3	11.7	10.3	7.1	4.0	2.8	2.9	7.5	4.9	3.8
Non-U.S., Temporary Visa		21.5	30.0	21.3	19.0	24.0	38.4	33.7	41.9	33.5	10.9	11.2	11.1	24.9	34.6	18.2
Unknown		7.2	7.9	5.5	6.3	6.5	7.4	7.4	8.5	7.5	3.7	4.7	4.6	13.7	6.0	5.6
Married	%	60.4	47.3	52.2	56.9	51.2	44.8	55.7	59.6	54.6	54.9	56.5	56.2	61.4	69.9	60.1
Not Married		31.1	44.5	40.3	34.8	40.9	46.5	36.0	30.5	36.6	40.6	37.5	37.9	22.9	22.6	32.8
Unknown		8.5	8.2	7.6	8.4	7.9	8.7	8.3	9.9	8.9	4.5	6.1	5.8	15.7	7.5	7.0
Median Age at Doctorate		32.7	30.0	29.2	31.8	29.9	29.9	31.9	31.0	30.5	29.9	31.0	30.8	33.7	32.9	31.4
Percent with Bacc in Same Field as Doctorate		57.0	72.9	82.1	45.6	73.1	72.4	15.1	74.3	70.7	27.6	64.0	58.5	28.7	64.7	57.8
Percent with Masters		77.2	62.7	35.4	75.7	51.4	73.6	83.7	86.8	70.4	32.9	57.0	53.4	70.6	90.8	64.3
Median Time Lapse From Bacc to Doct																
Total Time	Yrs	9.5	7.3	6.5	8.9	7.2	7.2	9.1	8.2	7.7	7.3	8.2	8.0	10.5	9.3	8.4
Registered Time		6.6	6.3	5.5	6.9	6.0	5.9	6.4	5.9	5.9	6.0	6.5	6.4	6.7	6.0	6.3
Postdoctoral Study Plans	%	24.2	52.3	46.9	37.6	47.3	25.1	10.9	19.5	31.5	77.7	66.0	67.8	16.4	22.8	52.3
Fellowship		10.8	15.3	21.6	16.0	18.5	9.9	2.9	4.5	10.8	45.1	37.4	38.5	7.5	6.4	27.9
Research Assoc		10.9	36.1	23.6	20.7	27.5	13.0	6.3	12.7	18.8	24.7	21.3	21.8	6.8	14.2	18.7
Traineeship		1.2	0.7	0.7	0.8	0.7	1.3	1.1	1.9	1.3	1.6	1.7	1.7	0.3	1.3	1.5
Other		1.4	0.2	1.1	0.2	0.6	1.0	0.6	0.4	0.6	6.4	5.7	5.8	1.7	0.8	4.2
Planned Employment After Doctorate	%	66.1	37.0	44.7	53.2	43.3	65.8	78.3	68.9	58.2	15.6	27.7	25.9	6[illegible].5	66.9	39.6
Educ Institution [2]		36.0	10.3	6.8	20.9	10.3	48.3	39.1	25.0	21.4	5.3	12.1	11.1	34.8	34.9	19.0
Industry/Business		15.9	18.2	34.1	18.4	26.0	12.3	32.3	33.7	28.5	7.7	7.2	7.3	16.4	13.3	9.5
Government		7.5	6.0	1.7	11.9	4.8	2.8	4.3	6.8	5.5	1.6	5.2	4.7	8.5	14.1	7.4
Nonprofit		4.1	1.0	0.9	1.2	1.0	0.8	0.9	1.1	1.0	0.8	1.8	1.6	5.1	1.3	1.8
Other & Unknown		2.5	1.5	1.1	0.8	1.2	1.6	1.7	2.3	1.7	0.3	1.4	1.3	1.7	3.2	1.8
Postdoc Status Unknown	%	9.6	10.7	8.4	9.2	9.3	9.0	10.9	11.6	10.4	6.6	6.2	6.3	17.1	10.3	8.2
Definite Postdoctoral Study		17.7	38.8	37.4	25.6	36.0	17.2	7.4	11.7	22.4	67.9	52.7	55.0	10.9	15.5	41.4
Seeking Postdoctoral Study		6.6	13.5	9.5	12.1	11.3	7.9	3.4	7.7	9.1	9.8	13.4	12.8	5.5	7.3	10.9
Definite Employment		49.4	27.5	36.5	39.1	33.7	50.7	58.9	49.2	43.2	10.3	19.1	17.8	52.6	50.1	28.8
Seeking Employment		16.7	9.6	8.2	14.1	9.6	15.1	19.4	19.7	15.0	5.3	8.7	8.2	14.0	16.8	10.8
Employment Activity After Doctorate																
Primary Activity																
R & D	%	34.0	68.2	83.1	59.7	74.5	44.0	63.6	62.0	64.5	59.0	50.0	50.8	48.1	54.6	52.1
Teaching		33.2	19.9	9.3	20.9	14.5	44.3	24.8	22.1	21.9	23.1	25.5	25.3	26.6	20.6	23.4
Administration		12.4	1.0	0.9	3.1	1.4	1.0	2.9	1.8	1.6	5.1	3.4	3.6	7.8	2.7	3.8
Prof. Services		11.5	4.1	2.2	7.9	3.8	2.9	3.4	5.1	4.3	5.1	13.2	12.5	11.0	7.6	10.1
Other		3.1	2.4	1.3	5.8	2.4	1.0	2.4	2.5	2.3	2.6	2.9	2.9	2.6	5.8	4.1
Secondary Activity																
R & D		24.5	19.3	9.3	20.4	14.2	39.8	24.3	22.1	21.4	15.4	24.3	23.5	24.0	23.9	23.8
Teaching		14.6	7.4	2.9	21.5	7.6	25.9	23.8	14.6	14.0	10.3	14.7	14.3	24.7	21.4	19.0
Administration		9.6	9.5	17.5	7.9	13.4	1.6	4.4	7.8	8.8	28.2	15.7	16.8	9.1	9.3	12.3
Prof. Services		6.6	4.4	5.6	6.8	5.5	4.2	5.3	5.6	5.4	7.7	5.9	6.0	8.4	6.6	6.6
Other		1.9	1.7	0.4	1.6	1.0	1.3	1.5	1.0	1.1	0.0	1.2	1.1	1.3	1.0	1.1
No Secondary Activity		37.0	53.4	61.1	39.3	54.9	20.4	37.9	42.4	44.1	33.3	33.3	33.3	28.6	29.1	30.8
Activity Unknown		5.9	4.4	3.3	2.6	3.5	6.8	2.9	6.5	5.3	5.1	4.9	4.9	3.9	8.7	6.4
Region of Employment After Doctorate																
New England	%	6.2	6.1	7.6	5.2	6.8	9.4	5.8	5.9	6.5	5.1	4.7	4.7	2.6	3.1	3.7
Middle Atlantic		14.0	18.2	22.7	5.2	18.2	12.3	23.3	14.1	15.9	20.5	12.0	12.8	14.3	4.5	9.3
East No Central		13.9	7.1	20.2	8.4	14.3	16.2	16.5	14.4	14.7	10.3	13.0	12.8	18.2	8.9	11.8
West No Central		6.5	3.4	4.0	5.2	4.1	5.2	3.4	4.8	4.5	5.1	6.4	6.3	8.4	9.1	7.8
South Atlantic		14.4	14.9	13.5	13.6	13.9	13.3	9.2	11.3	12.2	12.8	16.4	16.1	16.9	14.2	15.4
East So Central		3.8	2.7	2.7	3.1	2.8	4.2	1.9	2.7	2.8	0.0	3.7	3.4	3.2	3.1	3.2
West So Central		7.8	5.1	8.2	18.3	9.2	5.2	6.3	7.7	7.9	12.8	7.8	8.3	9.7	6.8	7.8
Mountain		4.8	5.7	3.3	8.4	4.9	5.5	1.5	5.9	5.3	5.1	4.2	4.3	3.9	4.1	4.1
Pacific & Insular		10.0	20.3	7.8	14.1	12.5	11.3	15.5	12.3	12.5	15.4	11.0	11.4	4.5	8.0	8.9
Foreign		13.1	12.5	5.8	16.2	9.6	12.9	12.6	16.2	13.4	10.3	16.9	16.3	16.9	33.8	24.2
Region Unknown		5.4	4.1	4.2	2.1	3.8	4.5	3.9	4.8	4.4	2.6	3.9	3.8	1.3	4.3	3.7

1/ Refer to explanatory note on pages 40-41 and the description of doctoral fields inside back cover.
2/ Includes 2-year, 4-year, and foreign colleges and universities, medical schools, and elementary/secondary schools.

APPENDIX A, TABLE 2 (Continued)

Doctorates: Men

Psychology	Economics	Anthropology and Sociology	Political Sci. & Internat'l Rel.	Other Social Sciences	Social Sciences Inc. Psychology	Total Sciences	History	Eng. and Amer. Lang. and Lit.	Foreign Lang. and Lit.	Other Humanities	Humanities	Business and Management	Other Professional Fields	Education	Total Non-Sciences	Other or Unspecified 3/
1507	695	460	358	342	3362	14323	379	300	190	1027	1896	694	583	3012	6185	18
49.1	80.7	52.7	73.1	62.6	57.6	72.5	67.3	41.6	42.7	59.3	54.8	77.0	56.3	45.6	51.5	69.2
87.5	52.2	72.8	60.6	52.9	71.8	61.9	80.2	84.3	63.2	77.9	77.9	55.0	75.0	79.8	76.0	
2.1	6.9	4.6	6.7	5.0	4.2	5.6	4.7	2.7	10.5	3.4	4.3	8.6	3.3	3.5	4.3	
3.1	34.1	15.0	21.8	30.7	15.9	25.4	10.3	8.0	16.3	9.7	10.2	27.1	12.0	10.6	12.4	
7.4	6.8	7.6	10.9	11.4	8.1	7.1	4.7	5.0	10.0	9.0	7.6	9.2	9.8	6.2	7.3	
57.0	58.1	62.6	57.3	67.5	59.1	57.1	64.4	57.3	48.4	57.6	58.0	68.3	64.5	75.2	68.1	
34.8	34.1	28.5	30.2	18.7	31.7	34.4	30.6	36.0	38.9	31.9	33.0	21.6	24.7	17.3	23.3	
8.2	7.8	8.9	12.6	13.7	9.2	8.5	5.0	6.7	12.6	10.4	9.0	10.1	10.8	7.5	8.6	
32.7	31.7	35.0	33.7	35.8	33.2	31.3	35.2	34.2	35.8	34.2	34.6	35.1	36.3	39.0	36.9	
65.8	59.0	52.6	53.4	22.2	56.8	64.0	66.2	68.7	46.8	55.4	58.8	34.6	22.8	34.7	41.0	
78.2	72.2	87.2	86.3	89.8	80.2	71.1	91.6	88.3	86.3	85.8	87.4	87.6	93.0	94.4	91.4	
9.6	8.4	11.5	10.4	12.2	9.9	8.3	12.0	11.4	12.3	11.5	11.6	12.0	13.0	15.2	13.5	
7.0	6.2	8.3	7.7	7.4	7.1	6.3	8.2	7.8	8.6	7.9	8.0	7.0	7.8	7.8	7.7	
17.7	6.5	15.0	7.0	9.1	13.0	32.6	10.0	6.3	13.2	7.1	8.2	2.7	3.6	3.7	5.0	
10.6	2.4	10.0	3.6	3.8	7.4	14.5	6.6	3.0	6.8	3.3	4.3	0.3	1.5	1.4	2.2	
3.2	2.0	3.3	1.7	4.1	2.9	15.0	2.1	2.3	2.1	1.7	1.9	1.0	0.9	1.6	1.5	
3.0	0.7	0.9	1.1	0.9	1.8	1.5	0.3	0.0	1.6	0.5	0.5	1.2	0.5	0.2	0.4	
0.9	1.3	0.9	0.6	0.3	0.9	1.6	1.1	1.0	2.6	1.7	1.5	0.3	0.7	0.5	0.8	
73.1	84.3	74.3	77.9	74.9	76.3	57.5	81.3	86.0	74.7	80.9	81.2	87.2	85.6	88.8	86.0	
23.2	54.7	51.7	46.9	42.1	38.0	24.7	57.5	76.0	63.2	60.1	62.4	71.6	46.5	63.1	62.3	
16.5	8.2	6.3	8.1	12.6	12.1	19.7	6.6	5.3	4.7	7.2	6.5	11.2	9.8	6.2	7.2	
13.3	14.7	6.3	12.3	10.8	12.3	7.6	7.7	0.3	1.1	2.5	3.1	2.3	8.2	11.2	7.4	
16.1	1.7	5.2	4.5	6.4	9.4	3.2	5.8	1.7	1.6	7.9	5.9	0.7	18.7	5.6	6.4	
4.1	5.0	4.8	6.1	2.9	4.5	2.4	3.7	2.7	4.2	3.2	3.3	1.3	2.4	2.7	2.7	
9.2	9.2	10.7	15.1	16.1	10.7	9.9	8.7	7.7	12.1	12.0	10.7	10.1	10.8	7.5	9.1	
12.9	3.9	9.6	3.6	5.0	8.8	24.2	5.0	3.7	6.3	3.7	4.2	1.7	1.9	2.0	2.6	
4.7	2.6	5.4	3.4	4.1	4.2	8.4	5.0	2.7	6.8	3.4	4.0	1.0	1.7	1.7	2.3	
54.9	67.3	48.9	52.8	55.3	56.5	42.5	53.6	57.7	52.1	53.1	53.8	73.9	68.3	70.1	65.4	
18.2	17.0	25.4	25.1	19.6	19.8	15.0	27.7	28.3	22.6	27.8	27.4	13.3	17.3	18.7	20.6	
17.9	43.6	27.6	19.6	29.6	26.7	50.5	9.4	3.5	6.1	8.6	7.6	27.9	7.3	5.8	9.2	
11.9	40.8	47.1	46.6	40.2	29.5	24.5	61.1	79.2	75.8	68.1	69.3	55.8	45.7	32.5	46.1	
6.3	3.4	8.4	10.1	10.1	6.6	3.6	9.4	8.1	6.1	5.0	6.5	6.6	13.8	41.9	25.7	
57.2	5.1	8.4	5.8	13.2	29.1	13.1	7.9	1.7	5.1	6.8	6.0	2.9	17.8	10.5	9.1	
3.4	1.5	2.7	8.5	1.1	3.1	2.9	6.9	3.5	2.0	7.2	6.0	2.1	7.8	1.5	3.3	
19.6	37.2	40.9	34.4	33.3	29.3	24.3	28.6	29.5	46.5	31.9	32.3	47.4	26.4	15.3	24.7	
14.5	22.4	13.3	10.6	15.3	16.0	15.5	9.4	6.4	8.1	10.1	9.1	25.0	14.8	12.3	13.3	
13.9	6.8	10.2	6.9	9.5	10.6	10.0	8.4	8.7	4.0	10.1	8.9	4.1	9.3	10.2	9.0	
8.5	3.2	4.4	3.2	5.8	5.9	5.8	2.5	2.9	1.0	5.3	3.9	3.7	8.3	10.6	7.8	
4.1	1.3	0.9	1.6	1.6	2.5	1.5	3.4	2.9	1.0	4.8	3.8	0.6	2.5	2.0	2.3	
36.0	23.5	24.4	33.9	28.6	30.6	37.5	42.4	45.7	34.3	33.4	37.4	14.6	31.2	41.9	36.2	
3.4	5.6	5.8	9.5	5.8	5.1	5.4	5.4	4.0	5.1	4.4	4.6	4.7	7.5	7.8	6.6	
7.5	7.1	8.0	7.9	5.3	7.3	6.2	8.4	4.6	13.1	7.2	7.5	5.8	3.8	5.9	6.1	
21.3	15.0	8.4	9.5	14.8	16.4	14.9	17.2	11.0	14.1	15.0	14.7	13.5	9.3	12.5	12.8	
14.9	13.0	17.8	9.0	13.2	14.0	13.9	14.3	16.8	9.1	14.1	14.1	14.6	13.1	13.7	13.9	
6.2	4.7	5.8	5.3	5.3	5.6	5.4	8.4	8.7	5.1	8.3	8.0	5.1	7.5	9.0	8.1	
15.2	18.8	9.8	23.8	11.6	16.0	13.9	13.3	11.0	9.1	14.3	13.0	12.9	15.8	16.5	15.1	
3.1	2.8	3.1	6.3	2.6	3.3	3.1	3.4	5.8	4.0	4.4	4.4	6.4	6.3	4.6	4.9	
8.6	5.1	7.1	6.3	4.8	7.0	7.6	4.9	6.4	6.1	7.3	6.6	11.5	10.3	7.6	8.1	
4.6	2.6	6.7	4.2	3.7	4.2	4.7	5.4	4.6	7.1	2.6	3.9	5.5	3.5	5.6	4.9	
10.5	6.4	11.6	6.3	10.1	9.2	10.8	7.4	9.2	16.2	9.9	9.9	11.3	8.3	7.8	8.8	
1.8	22.0	17.3	14.8	22.2	12.0	14.9	11.3	8.1	9.1	11.0	10.4	10.5	12.8	9.8	10.4	
6.3	2.6	4.4	6.3	6.3	5.2	4.5	5.9	13.9	7.1	5.9	7.4	2.9	9.3	7.1	6.8	

3/ Statistics are not presented for this group because too few records contained the specific data.

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX A, TABLE 2 Statistical Profile of Doctorate Recipients, by Field of Doctorate, 1986[1]

Doctorates: Women

	1986 Total	Physics and Astronomy	Chemistry	Earth, Atmos., and Marine Sci.	Physical Sciences	Mathematics	Computer Sciences	Engineering	EMP Fields	Biochemistry	Other Biosciences	Biosciences	Health Sciences	Agricultural Sciences	Life Sciences
Total Female	11244	109	396	100	605	121	49	225	1000	194	1082	1276	479	188	1943
Female as a Percent of Total Doctorates	35.4	9.2	20.8	17.0	16.4	16.6	12.3	6.7	12.2	34.0	33.6	33.7	62.0	16.2	34.0
U.S. Citizenship %	83.6	51.4	69.7	78.0	67.8	57.0	77.6	61.8	65.6	78.9	85.0	84.1	85.2	68.1	82.8
Non-U.S., Permanent Visa	3.2	5.5	8.3	3.0	6.9	3.3	12.2	8.9	7.2	1.0	3.6	3.2	2.7	3.7	3.1
Non-U.S., Temporary Visa	7.6	38.5	18.2	13.0	21.0	31.4	8.2	21.8	21.8	16.0	7.4	8.7	5.4	23.9	9.4
Unknown	5.5	4.6	3.8	6.0	4.3	8.3	2.0	7.6	5.4	4.1	4.0	4.0	6.7	4.3	4.7
Married %	51.6	46.8	49.5	48.0	48.8	52.1	63.3	52.4	50.7	54.1	46.7	47.8	54.1	45.7	49.2
Not Married	40.8	46.8	45.2	46.0	45.6	40.5	34.7	38.2	42.8	40.2	47.6	46.5	37.2	46.8	44.2
Unknown	7.6	6.4	5.3	6.0	5.6	7.4	2.0	9.3	6.5	5.7	5.7	5.7	8.8	7.4	6.6
Median Age at Doctorate	35.4	29.6	29.1	31.9	29.7	30.6	32.8	30.3	30.0	29.6	31.1	30.9	36.7	31.0	31.9
Percent with Bacc in Same Field as Doctorate	51.6	73.4	80.6	55.0	75.0	75.2	18.4	55.1	67.8	19.6	62.6	56.0	58.0	48.9	55.8
Percent with Masters	83.0	72.5	45.5	77.0	55.5	71.1	89.8	82.2	65.1	32.5	51.4	48.5	87.9	92.0	62.4
Median Time Lapse From Bacc to Doct															
Total Time Yrs	12.1	7.3	6.4	9.3	7.0	8.0	9.4	7.6	7.3	7.3	8.4	8.2	12.7	8.7	9.2
Registered Time	7.3	6.3	5.5	7.0	5.9	6.5	7.0	6.2	6.0	6.0	6.5	6.4	7.0	6.0	6.5
Postdoctoral Study Plans %	18.0	45.9	48.2	28.0	44.5	16.5	14.3	15.6	33.1	79.9	66.4	68.4	14.8	26.1	51.1
Fellowship	9.5	14.7	22.5	8.0	18.7	8.3	2.0	5.3	13.6	50.0	38.7	40.4	6.1	5.9	28.6
Research Assoc	6.2	29.4	24.5	19.0	24.5	5.8	12.2	9.8	18.3	27.3	22.0	22.8	5.8	17.6	18.1
Traineeship	1.0	0.9	0.3	0.0	0.3	2.5	0.0	0.4	0.6	0.0	1.8	1.6	0.8	1.6	1.4
Other	1.3	0.9	1.0	1.0	1.0	0.0	0.0	0.0	0.6	2.6	3.8	3.6	2.1	1.1	3.0
Planned Employment After Doctorate %	74.1	45.9	44.7	67.0	48.6	71.9	85.7	75.1	59.2	13.9	28.1	25.9	76.6	64.9	42.2
Educ Institution [2]	47.5	11.9	9.3	35.0	14.0	49.6	51.0	24.0	22.4	6.2	16.0	14.5	49.5	33.5	25.0
Industry/Business	10.4	22.0	30.6	11.0	25.8	16.5	26.5	38.2	27.5	5.2	6.4	6.2	7.9	16.5	7.6
Government	6.4	9.2	3.0	11.0	5.5	2.5	2.0	6.2	5.1	1.5	2.9	2.7	7.5	6.9	4.3
Nonprofit	5.1	0.9	0.3	1.0	0.5	0.8	4.1	0.9	0.8	0.5	1.0	0.9	8.1	0.5	2.7
Other & Unknown	4.8	1.8	1.5	9.0	2.8	2.5	2.0	5.8	3.4	0.5	1.8	1.6	3.5	7.4	2.7
Postdoc Status Unknown %	7.8	8.3	7.1	5.0	6.9	11.6	0.0	9.3	7.7	6.2	5.5	5.6	8.6	9.0	6.7
Definite Postdoctoral Study	12.8	35.8	34.1	21.0	32.2	8.3	8.2	8.4	22.8	68.0	51.5	54.0	11.3	17.0	39.9
Seeking Postdoctoral Study	5.2	10.1	14.1	7.0	12.2	8.3	6.1	7.1	10.3	11.9	14.9	14.4	3.5	9.0	11.2
Definite Employment	52.1	34.9	28.8	38.0	31.4	52.1	61.2	50.7	39.7	8.8	18.0	16.6	57.4	39.9	28.9
Seeking Employment	22.1	11.0	15.9	29.0	17.2	19.8	24.5	24.4	19.5	5.2	10.1	9.3	19.2	25.0	13.3
Employment Activity After Doctorate															
Primary Activity															
R & D %	16.0	63.2	75.4	50.0	67.9	42.9	56.7	66.7	62.7	52.9	43.6	44.3	24.4	64.0	37.2
Teaching	42.8	21.1	17.5	39.5	22.6	41.3	36.7	21.1	26.2	23.5	28.7	28.3	46.9	26.7	37.2
Administration	16.4	2.6	3.5	5.3	3.7	1.6	0.0	0.0	2.0	0.0	5.1	4.7	10.2	0.0	6.8
Prof. Services	16.6	5.3	1.8	2.6	2.6	9.5	0.0	5.3	4.3	11.8	12.8	12.7	11.6	5.3	11.2
Other	2.9	7.9	0.0	2.6	2.1	0.0	6.7	1.8	2.0	5.9	5.1	5.2	2.9	0.0	3.4
Secondary Activity															
R & D	27.6	18.4	11.4	26.3	15.8	34.9	30.0	21.9	21.7	23.5	23.6	23.6	35.6	24.0	29.5
Teaching	13.1	5.3	4.4	18.4	7.4	25.4	20.0	13.2	12.8	11.8	17.4	17.0	16.7	25.3	18.0
Administration	8.7	7.9	12.3	2.6	9.5	1.6	6.7	7.9	7.6	0.0	8.2	7.5	10.5	4.0	8.5
Prof. Services	8.2	2.6	7.0	2.6	5.3	3.2	0.0	2.6	3.8	5.9	7.2	7.1	9.1	6.7	8.0
Other	2.6	7.9	1.8	2.6	3.2	1.6	0.0	2.6	2.5	0.0	1.5	1.4	0.4	4.0	1.2
No Secondary Activity	34.6	57.9	61.4	47.4	57.9	28.6	43.3	46.5	48.9	52.9	37.4	38.7	23.6	32.0	30.4
Activity Unknown	5.3	0.0	1.8	0.0	1.1	4.8	0.0	5.3	2.8	5.9	4.6	4.7	4.0	4.0	4.3
Region of Employment After Doctorate															
New England %	7.3	13.2	7.9	7.9	8.9	15.9	6.7	3.5	8.3	5.9	6.2	6.1	7.3	4.0	6.4
Middle Atlantic	16.1	18.4	25.4	0.0	18.9	19.0	16.7	22.8	19.9	23.5	12.3	13.2	13.8	4.0	12.3
East No Central	14.3	5.3	20.2	18.4	16.8	11.1	20.0	14.0	15.4	11.8	17.4	17.0	16.0	9.3	15.5
West No Central	6.5	7.9	7.0	7.9	7.4	4.8	0.0	3.5	5.3	5.9	5.1	5.2	6.9	10.7	6.8
South Atlantic	15.5	10.5	15.8	7.9	13.2	11.1	6.7	7.9	10.8	17.6	20.0	19.8	12.7	10.7	15.1
East So Central	4.3	0.0	1.8	7.9	2.6	1.6	0.0	0.9	1.8	0.0	2.6	2.4	4.4	14.7	5.0
West So Central	7.8	2.6	6.1	18.4	7.9	9.5	10.0	8.8	8.6	0.0	4.6	4.2	13.5	8.0	9.3
Mountain	4.6	13.2	1.8	10.5	5.8	4.8	0.0	4.4	4.8	0.0	3.6	3.3	5.8	4.0	4.6
Pacific & Insular	10.6	21.1	5.3	15.8	10.5	6.3	26.7	20.2	13.9	5.9	12.3	11.8	7.6	9.3	9.4
Foreign	4.7	7.9	3.5	2.6	4.2	6.3	0.0	7.9	5.3	17.6	10.8	11.3	6.5	22.7	10.5
Region Unknown	8.2	0.0	5.3	2.6	3.7	9.5	13.3	6.1	6.0	11.8	5.1	5.7	5.5	2.7	5.2

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[1] Refer to explanatory note on pages 40-41 and the description of doctoral fields inside back cover.
[2] Includes 2-year, 4-year, and foreign colleges and universities, medical schools, and elementary/secondary schools.

APPENDIX A, TABLE 2 (Continued)

Doctorates: Women

Psychology	Economics	Anthropology and Sociology	Political Sci.& Internat'l Rel.	Other Social Sciences	Social Sciences Inc. Psychology	Total Sciences	History	Eng. and Amer. Lang. and Lit.	Foreign Lang. and Lit.	Other Humanities	Humanities	Business and Management	Other Professional Fields	Education	Total Non-Sciences	Other or Unspecified 3/
1564	166	413	132	204	2479	5422	184	421	255	705	1565	207	452	3590	5814	8
50.9	19.3	47.3	26.9	37.4	42.4	27.5	32.7	58.4	57.3	40.7	45.2	23.0	43.7	54.4	48.5	30.8
90.5	66.9	84.5	75.0	77.9	86.1	81.1	87.5	84.1	66.3	80.4	79.9	82.6	84.7	88.9	85.9	
2.0	6.6	4.8	4.5	5.4	3.2	3.9	2.7	2.9	11.4	3.7	4.6	2.4	1.8	1.8	2.6	
2.1	20.5	6.8	11.4	12.7	5.5	9.9	5.4	5.7	13.7	8.5	8.2	8.2	6.0	4.2	5.6	
5.4	6.0	3.9	9.1	3.9	5.2	5.1	4.3	7.4	8.6	7.4	7.2	6.8	7.5	5.1	5.9	
45.6	45.8	51.1	46.2	50.5	47.0	48.4	52.2	51.5	54.5	49.9	51.4	60.4	47.1	56.5	54.6	
46.5	46.4	42.9	43.2	42.6	45.4	44.5	41.8	39.4	33.3	40.4	39.2	31.4	44.2	36.0	37.3	
7.9	7.8	6.1	10.6	6.9	7.7	7.1	6.0	9.0	12.2	9.6	9.5	8.2	8.6	7.5	8.1	
33.3	30.8	35.7	33.1	35.3	33.6	32.2	36.1	36.2	35.8	35.3	35.7	34.6	38.0	40.0	38.5	
62.0	62.7	57.1	54.5	19.6	57.4	58.7	64.7	69.4	54.5	49.5	57.4	33.8	24.6	42.7	44.9	
82.0	74.1	87.7	84.1	90.7	83.3	72.4	89.7	89.1	84.3	89.9	88.8	85.5	91.6	95.2	92.8	
9.8	8.4	11.5	10.5	12.0	10.2	9.3	13.1	12.9	12.1	12.9	12.8	11.7	14.6	16.2	14.9	
7.0	6.5	8.5	8.2	7.7	7.3	6.7	9.1	8.5	8.6	8.4	8.5	6.9	7.5	7.8	7.9	
19.2	4.2	22.0	7.6	12.7	17.5	32.4	12.5	5.5	7.1	8.1	7.7	1.0	2.7	3.7	4.6	
11.8	1.8	12.1	1.5	8.3	10.3	17.5	9.8	2.4	4.7	4.1	4.4	0.0	0.9	1.2	2.0	
3.1	1.2	5.6	3.8	2.9	3.4	11.4	0.5	0.5	0.8	1.4	1.0	0.5	1.1	1.6	1.4	
2.7	0.6	1.5	0.0	1.5	2.1	1.6	0.0	0.2	0.8	0.6	0.4	0.5	0.2	0.5	0.4	
1.6	0.6	2.9	2.3	0.0	1.7	1.9	2.2	2.4	0.8	2.0	1.9	0.0	0.4	0.4	0.8	
73.3	89.8	69.7	79.5	79.9	74.7	60.2	78.3	86.0	80.4	80.9	81.9	92.3	87.4	89.1	87.2	
25.4	54.8	46.5	56.1	47.5	34.3	28.8	54.9	74.1	67.8	60.9	64.9	80.7	61.5	64.6	65.0	
17.3	9.6	6.8	10.6	8.8	14.0	14.2	6.0	4.3	3.9	5.4	4.9	6.3	9.1	7.4	6.8	
9.1	13.9	5.3	6.8	9.8	8.7	6.5	3.8	1.7	0.4	2.6	2.1	1.9	6.4	8.3	6.3	
15.0	2.4	5.3	2.3	8.8	11.4	6.3	4.3	0.5	1.2	5.4	3.3	1.4	6.9	4.0	4.0	
6.6	9.0	5.8	3.8	4.9	6.3	4.5	9.2	5.5	7.1	6.7	6.7	1.9	3.5	4.8	5.1	
7.5	6.0	8.2	12.9	7.4	7.8	7.4	9.2	8.6	12.5	11.1	10.4	6.8	10.0	7.1	8.2	
14.0	3.0	12.6	1.5	8.3	11.9	23.9	8.7	3.1	3.9	4.0	4.3	0.0	1.3	1.9	2.4	
5.2	1.2	9.4	6.1	4.4	5.6	8.5	3.8	2.4	3.1	4.1	3.5	1.0	1.3	1.8	2.2	
51.7	69.3	43.6	56.8	52.9	51.9	41.4	47.8	55.6	51.4	50.8	51.8	79.2	66.4	64.9	62.0	
21.6	20.5	26.2	22.7	27.0	22.8	18.8	30.4	30.4	29.0	30.1	30.0	13.0	21.0	24.2	25.1	
12.5	42.6	30.6	16.0	18.5	18.4	30.9	8.0	4.7	2.3	8.1	6.2	29.9	10.3	4.8	6.7	
16.3	44.3	47.2	64.0	43.5	28.2	30.1	71.6	79.5	83.2	72.1	76.0	60.4	51.7	41.2	50.7	
4.1	0.9	5.6	5.3	13.9	4.9	4.9	11.4	3.8	4.6	7.5	6.4	3.0	15.0	32.0	23.5	
60.8	3.5	7.2	4.0	13.0	40.9	27.0	2.3	1.3	2.3	2.5	2.1	4.3	17.0	12.6	10.2	
3.0	3.5	3.3	5.3	7.4	3.6	3.3	2.3	3.8	3.8	4.5	3.9	0.6	2.3	2.4	2.6	
23.4	37.4	37.2	48.0	41.7	29.5	28.1	46.6	39.7	55.7	41.1	43.6	56.7	34.3	18.5	27.2	
15.5	21.7	14.4	12.0	11.1	15.3	15.5	9.1	5.6	5.3	8.1	7.0	27.4	18.0	11.1	11.5	
9.8	5.2	9.4	6.7	6.5	8.9	8.5	1.1	6.8	5.3	8.1	6.5	1.2	7.7	10.2	8.7	
6.9	1.7	5.0	5.3	10.2	6.4	6.3	5.7	3.4	2.3	5.0	4.2	1.8	7.3	11.9	9.3	
3.2	0.0	2.8	1.3	3.7	2.8	2.4	2.3	2.1	1.5	7.0	4.2	0.6	2.0	2.5	2.8	
37.9	28.7	25.0	21.3	23.1	33.1	35.2	30.7	35.5	26.0	25.4	29.0	10.4	27.0	38.6	34.2	
3.3	5.2	6.1	5.3	3.7	4.0	3.9	4.5	6.8	3.8	5.3	5.4	1.8	3.7	7.1	6.2	
8.8	12.2	10.6	14.7	3.7	9.2	8.4	12.5	9.8	7.6	7.8	8.9	7.9	4.7	6.1	6.7	
19.2	22.6	18.3	20.0	15.7	19.1	17.5	14.8	15.8	15.3	15.9	15.7	14.6	17.3	14.8	15.2	
14.3	14.8	14.4	16.0	16.7	14.7	15.0	8.0	14.5	12.2	12.8	12.7	17.1	14.7	13.8	13.8	
6.2	2.6	5.0	8.0	11.1	6.2	6.2	4.5	5.1	3.1	6.4	5.3	7.9	6.0	7.2	6.7	
14.5	23.5	12.2	18.7	21.3	15.8	14.7	17.0	10.7	20.6	12.0	13.6	20.1	14.7	16.7	16.0	
2.5	1.7	4.4	0.0	3.7	2.6	3.1	1.1	6.8	3.1	4.7	4.7	3.0	4.0	5.5	5.1	
6.6	0.9	5.6	2.7	3.7	5.4	6.9	6.8	9.0	6.1	4.5	6.3	8.5	8.7	9.1	8.4	
4.1	5.2	3.9	2.7	0.9	3.8	4.2	3.4	3.0	1.5	5.9	4.1	4.3	5.3	5.2	4.9	
12.0	5.2	12.2	10.7	7.4	11.0	11.1	15.9	11.1	14.5	13.1	13.1	11.0	11.7	9.1	10.3	
2.0	9.6	7.2	5.3	12.0	4.4	6.1	5.7	4.7	8.4	7.0	6.4	3.0	4.0	3.0	3.9	
10.0	1.7	6.1	1.3	3.7	7.7	6.8	10.2	9.4	7.6	9.8	9.4	2.4	9.0	9.5	9.1	

3/ Statistics are not presented for this group because too few records contained the specific data.

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX A, TABLE 3 Sources of Support in Graduate School of Doctorate Recipients, by Sex and Summary Field, 1986

Sources of Support in Graduate School		Total		Field of Doctorate													
				Physical 1/ Sciences		Engineering		Life Sciences		Social Sciences		Humanities		Prof. Fields		Education	
		Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
NSF Fellowship	N	424	186	166	27	84	10	81	68	71	62	5	8	2	2	15	9
	V% 2/	2.2	1.8	4.4	3.7	2.9	4.9	2.3	3.7	2.3	2.7	0.3	0.6	0.2	0.3	0.5	0.3
	H%	100.0	100.0	39.2	14.5	19.8	5.4	19.1	36.6	16.7	33.3	1.2	4.3	0.5	1.1	3.5	4.8
NIH Traineeship	N	885	696	46	21	23	8	643	465	162	170	0	1	5	9	6	22
	V%	4.7	6.6	1.2	2.9	0.8	3.9	18.2	25.3	5.3	7.3	0.0	0.1	0.4	1.5	0.2	0.6
	H%	100.0	100.0	5.2	3.0	2.6	1.1	72.7	66.8	18.3	24.4	0.0	0.1	0.6	1.3	0.7	3.2
Other Dept 3/ of Health & Human Servs.	N	160	215	5	1	6	1	51	86	79	97	1	0	13	13	5	17
	V%	0.8	2.0	0.1	0.1	0.2	0.5	1.4	4.7	2.6	4.2	0.1	0.0	1.1	2.1	0.2	0.5
	H%	100.0	100.0	3.1	0.5	3.8	0.5	31.9	40.0	49.4	45.1	0.6	0.0	8.1	6.0	3.1	7.9
Graduate & Prof. Opportunities Program	N	98	105	14	18	7	10	22	23	28	24	7	8	3	7	17	15
	V%	0.5	1.0	0.4	2.5	0.2	4.9	0.6	1.2	0.9	1.0	0.4	0.6	0.3	1.2	0.6	0.4
	H%	100.0	100.0	14.3	17.1	7.1	9.5	22.4	21.9	28.6	22.9	7.1	7.6	3.1	6.7	17.3	14.3
Other Dept 4/ of Education	N	200	148	7	2	3	0	9	10	46	41	88	44	5	2	42	49
	V%	1.1	1.4	0.2	0.3	0.1	0.0	0.3	0.5	1.5	1.8	5.1	3.0	0.4	0.3	1.5	1.4
	H%	100.0	100.0	3.5	1.4	1.5	0.0	4.5	6.8	23.0	27.7	44.0	29.7	2.5	1.4	21.0	33.1
GI Bill	N	709	79	59	2	58	0	61	15	155	28	92	5	78	4	205	25
	V%	3.8	0.7	1.6	0.3	2.0	0.0	1.7	0.8	5.1	1.2	5.3	0.3	6.8	0.7	7.3	0.7
	H%	100.0	100.0	8.3	2.5	8.2	0.0	8.6	19.0	21.9	35.4	13.0	6.3	11.0	5.1	28.9	31.6
Other Federal Support	N	746	380	139	17	132	11	155	101	146	113	76	52	40	11	58	75
	V%	4.0	3.6	3.7	2.3	4.6	5.3	4.4	5.5	4.8	4.8	4.4	3.6	3.5	1.8	2.1	2.2
	H%	100.0	100.0	18.6	4.5	17.7	2.9	20.8	26.6	19.6	29.7	10.2	13.7	5.4	2.9	7.8	19.7
Nat'l Fellowship (non-federal)	N	672	484	131	43	86	22	102	66	128	126	131	135	44	38	49	54
	V%	3.6	4.6	3.5	5.9	3.0	10.7	2.9	3.6	4.2	5.4	7.6	9.3	3.8	6.3	1.7	1.6
	H%	100.0	100.0	19.5	8.9	12.8	4.5	15.2	13.6	19.0	26.0	19.5	27.9	6.5	7.9	7.3	11.2
Teaching Assistantship	N	9333	4709	2614	528	1207	96	1380	741	1779	1274	1160	984	577	309	608	775
	V%	49.4	44.6	69.9	71.9	42.3	46.6	39.1	40.2	58.2	54.5	67.1	68.1	50.3	51.0	21.7	22.9
	H%	100.0	100.0	28.0	11.2	12.9	2.0	14.8	15.7	19.1	27.1	12.4	20.9	6.2	6.6	6.5	16.5
Research Assistantship	N	8976	3380	2775	523	2049	146	1986	919	1174	871	247	211	352	201	385	508
	V%	47.6	32.0	74.2	71.3	71.8	70.9	56.3	49.9	38.4	37.3	14.3	14.6	30.7	33.2	13.7	15.0
	H%	100.0	100.0	30.9	15.5	22.8	4.3	22.1	27.2	13.1	25.8	2.8	6.2	3.9	5.9	4.3	15.0
University Fellowship	N	4039	2217	840	158	498	59	696	422	792	564	685	579	256	127	269	307
	V%	21.4	21.0	22.5	21.5	17.4	28.6	19.7	22.9	25.9	24.1	39.6	40.1	22.3	21.0	9.6	9.1
	H%	100.0	100.0	20.8	7.1	12.3	2.7	17.2	19.0	19.6	25.4	17.0	26.1	6.3	5.7	6.7	13.8
College Work-Study	N	710	495	63	17	48	2	138	71	204	177	129	110	32	10	95	108
	V%	3.8	4.7	1.7	2.3	1.7	1.0	3.9	3.9	6.7	7.6	7.5	7.6	2.8	1.7	3.4	3.2
	H%	100.0	100.0	8.9	3.4	6.8	0.4	19.4	14.3	28.7	35.8	18.2	22.2	4.5	2.0	13.4	21.8
Other University Related	N	1079	957	151	41	104	12	208	140	223	241	131	136	73	62	188	325
	V%	5.7	9.1	4.0	5.6	3.6	5.8	[illegible].9	7.6	7.3	10.3	7.6	9.4	6.4	10.2	6.7	9.6
	H%	100.0	100.0	14.0	4.3	9.6	1.3	[illegible].3	14.6	20.7	25.2	12.1	14.2	6.8	6.5	17.4	34.0
Business/Employer Funds	N	1067	525	143	19	223	18	111	75	135	77	65	37	90	45	299	254
	V%	5.7	5.0	3.8	2.6	7.8	8.7	3.1	4.1	4.4	3.3	3.8	2.6	7.8	7.4	10.7	7.5
	H%	100.0	100.0	13.4	3.6	20.9	3.4	10.4	14.3	12.7	14.7	6.1	7.0	8.4	8.6	28.0	48.4
Own Earnings	N	10453	7071	1286	234	1088	78	1589	889	2048	1603	1248	973	767	429	2415	2861
	V%	55.4	67.0	34.4	31.9	38.1	37.9	45.0	48.3	67.0	68.6	72.2	67.4	66.9	70.8	86.1	84.5
	H%	100.0	100.0	12.3	3.3	10.4	1.1	15.2	12.6	19.6	22.7	11.9	13.8	7.3	6.1	23.1	40.5
Spouse's Earnings	N	5346	3825	780	168	470	53	1114	569	983	820	663	589	333	235	998	1391
	V%	28.3	36.2	20.9	22.9	16.5	25.7	31.6	30.9	32.2	35.1	38.3	40.8	29.0	38.8	35.6	41.1
	H%	100.0	100.0	14.6	4.4	8.8	1.4	20.8	14.9	18.4	21.4	12.4	15.4	6.2	6.1	18.7	36.4
Family Support	N	4716	2432	828	154	790	36	875	414	935	717	558	426	292	123	434	562
	V%	25.0	23.0	22.1	21.0	27.7	17.5	24.8	22.5	30.6	30.7	32.3	29.5	25.5	20.3	15.5	16.6
	H%	100.0	100.0	17.6	6.3	16.8	1.5	18.6	17.0	19.8	29.5	11.8	17.5	6.2	5.1	9.2	23.1
Guaranteed Student Loans	N	4417	3008	619	119	281	34	888	493	1207	1027	464	374	286	172	666	788
	V%	23.4	28.5	16.6	16.2	9.8	16.5	25.2	26.8	39.5	44.0	26.8	25.9	24.9	28.4	23.8	23.3
	H%	100.0	100.0	14.0	4.0	6.4	1.1	20.1	16.4	27.3	34.1	10.5	12.4	6.5	5.7	15.1	26.2
National Direct Student Loans	N	1066	765	89	15	40	9	170	81	372	306	182	169	66	43	146	141
	V%	5.6	7.2	2.4	2.0	1.4	4.4	4.8	4.4	12.2	13.1	10.5	11.7	5.8	7.1	5.2	4.2
	H%	100.0	100.0	8.3	2.0	3.8	1.2	15.9	10.6	34.9	40.0	17.1	22.1	6.2	5.6	13.7	18.4
Other Loans	N	553	405	44	18	53	4	75	68	157	120	67	49	40	30	117	116
	V%	2.9	3.8	1.2	2.5	1.9	1.9	2.1	3.7	5.1	5.1	3.9	3.4	3.5	5.0	4.2	3.4
	H%	100.0	100.0	8.0	4.4	9.6	1.0	13.6	16.8	28.4	29.6	12.1	12.1	7.2	7.4	21.2	28.6
Other	N	1329	624	208	35	205	12	286	124	203	106	128	79	104	47	193	219
	V%	7.0	5.9	5.6	4.8	7.2	5.8	8.1	6.7	6.6	4.5	7.4	5.5	9.1	7.8	6.9	6.5
	H%	100.0	100.0	15.7	5.6	15.4	1.9	21.5	19.9	15.3	17.0	9.6	12.7	7.8	7.5	14.5	35.1
Unduplicated 5/ Total	N	18876	10560	3739	734	2855	206	3528	1841	3056	2336	1729	1444	1147	606	2804	3387

1/ Includes mathematics and computer sciences.
2/ V denotes vertical percentage; H denotes horizontal percentage.
3/ Includes ADAMHA Traineeships and Fellowships.
4/ Includes Title IV Foreign Language and Area Studies Fellowships.
5/ The 2,334 Ph.D.s who did not report sources of support are omitted from this table.

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX A, TABLE 4 State of Doctoral Institution of Doctorate Recipients, by Sex and Summary Field, 1986

State of Doctoral Institution	Total		Field of Doctorate: Physical Sciences 1/		Engineering		Life Sciences		Social Sciences		Humanities		Prof. Fields		Education	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
U.S. Total	20526	11244	4033	775	3151	225	3777	1943	3362	2479	1896	1565	1277	659	3012	3590
Alabama	157	102	17	4	20	1	38	20	15	6	6	6	12	6	49	59
Alaska	11	1	6	0	1	0	4	1	0	0	0	0	0	0	0	0
Arizona	313	148	70	18	33	0	59	21	29	18	33	12	17	8	72	71
Arkansas	103	29	9	4	15	0	38	5	7	2	1	4	16	1	17	13
California	2541	1218	618	111	492	37	410	228	428	329	240	198	141	57	211	258
Colorado	392	178	88	12	59	6	76	27	71	41	23	22	20	8	54	61
Connecticut	285	154	75	17	20	1	54	38	50	25	55	42	10	2	21	29
Delaware	76	24	22	3	20	3	6	2	15	7	7	4	0	1	6	4
D. C.	298	250	41	11	45	0	26	49	73	67	54	50	23	21	36	52
Florida	613	391	76	11	61	2	94	28	99	67	43	31	50	23	190	229
Georgia	368	241	48	8	53	1	78	26	49	56	30	18	30	16	80	116
Hawaii	91	41	15	3	4	0	22	11	33	19	14	5	0	0	3	3
Idaho	26	17	4	2	2	0	10	3	3	0	1	2	0	0	6	10
Illinois	1150	624	224	34	194	19	168	112	217	151	119	84	85	46	142	175
Indiana	627	299	112	19	123	8	107	52	91	55	84	51	29	16	81	98
Iowa	375	155	69	10	71	0	85	35	36	22	30	21	13	10	71	57
Kansas	229	124	26	3	23	0	60	22	41	28	23	14	11	9	45	48
Kentucky	131	49	9	5	12	0	32	11	33	12	13	8	21	3	11	10
Louisiana	209	82	33	8	20	1	61	22	23	16	20	11	34	7	18	17
Maine	22	6	4	1	4	0	7	2	0	1	0	0	1	0	6	2
Maryland	373	264	90	18	54	4	98	70	52	48	25	40	12	12	42	72
Massachusetts	1158	686	301	68	218	27	137	108	204	149	94	90	66	29	138	215
Michigan	815	443	131	29	118	7	149	77	145	96	75	63	42	30	150	139
Minnesota	392	164	70	11	68	6	116	33	57	47	33	26	12	10	35	31
Mississippi	153	102	13	2	12	2	35	4	31	21	6	5	17	5	39	63
Missouri	365	171	61	15	55	4	68	18	63	56	33	24	28	4	77	50
Montana	46	14	7	1	4	0	17	5	6	4	0	0	0	0	12	4
Nebraska	131	79	12	5	4	0	36	18	21	14	10	10	14	10	34	22
Nevada	16	12	3	0	1	0	2	3	5	4	0	0	0	0	5	5
New Hampshire	37	19	13	4	6	0	9	6	6	4	2	4	0	0	1	1
New Jersey	420	219	111	26	59	5	59	45	70	44	52	36	22	9	47	54
New Mexico	134	72	22	6	29	1	29	7	25	14	10	14	0	0	19	30
New York	1993	1331	414	64	271	23	311	215	411	383	257	240	110	72	219	333
North Carolina	480	246	97	14	65	4	147	67	57	54	45	40	16	17	52	50
North Dakota	55	12	12	1	3	0	23	4	6	2	5	1	0	0	6	4
Ohio	800	474	166	33	143	9	123	62	108	102	69	65	62	49	129	154
Oklahoma	242	158	31	11	38	3	59	20	29	22	13	17	10	21	62	64
Oregon	266	129	50	8	14	0	76	22	51	32	9	13	13	9	53	45
Pennsylvania	1084	626	179	45	184	17	160	71	182	119	99	81	86	41	193	252
Rhode Island	132	51	65	13	13	1	21	6	19	13	14	18	0	0	0	0
South Carolina	160	77	39	9	11	1	31	15	22	13	9	9	16	3	32	27
South Dakota	34	21	0	1	1	0	9	0	7	2	0	0	0	0	17	18
Tennessee	330	240	26	6	34	0	47	38	70	36	28	17	21	14	104	129
Texas	1218	694	220	41	195	12	220	158	153	107	100	78	145	50	181	248
Utah	248	123	36	6	41	2	36	21	48	34	10	12	10	6	65	42
Vermont	27	23	4	2	1	0	10	4	9	12	0	3	0	0	3	2
Virginia	410	208	74	12	77	6	89	37	51	36	32	20	15	17	72	80
Washington	350	163	84	12	48	2	92	44	55	44	28	21	10	3	33	37
West Virginia	69	45	6	2	16	2	15	8	11	5	3	1	1	0	17	27
Wisconsin	517	223	132	22	91	8	100	41	72	38	37	32	36	14	48	67
Wyoming	48	19	16	4	5	0	16	0	3	2	0	0	0	0	8	13
Puerto Rico	6	3	2	0	0	0	2	1	0	0	2	2	0	0	0	0

1/ Includes mathematics and computer sciences.

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX A, TABLE 5 Statistical Profile of Doctorate Recipients, by Racial/Ethnic Group and Citizenship Status, 1986[1/]

		Total				American Indian	Asian				Black			
		U.S.	Non-U.S. Perm.	Non-U.S. Temp.	Total	Total	U.S.	Non-U.S. Perm.	Non-U.S. Temp.	Total	U.S.	Non-U.S. Perm.	Non-U.S. Temp.	Total
Total Number		22984	1422	5267	31770[2/]	100	527	523	2639	3713[2/]	820	126	313	1267[2/]
Male	%	59.1	74.6	83.7	64.6	59.0	65.8	78.8	85.3	81.6	39.1	84.1	87.9	55.6
Female		40.9	25.4	16.3	35.4	41.0	34.2	21.2	14.7	18.4	60.9	15.9	12.1	44.4
Doctoral Field														
Physical Sciences[3/]	%	13.1	16.9	23.9	15.1	8.0	20.3	22.8	27.2	25.6	3.0	6.3	9.9	5.1
Engineering		6.0	24.1	26.0	10.6	6.0	15.2	34.8	31.6	29.7	1.7	7.9	8.0	3.9
Life Sciences		18.9	14.3	16.5	18.0	24.0	28.8	12.8	14.7	16.5	7.8	16.7	28.1	13.7
Social Sciences		19.8	15.5	12.8	18.4	20.0	13.1	9.9	10.1	10.4	19.9	22.2	18.5	19.7
Humanities		11.9	10.8	6.1	10.9	7.0	5.7	4.0	3.8	4.0	8.5	7.9	7.3	8.1
Education		24.3	11.8	8.9	20.8	26.0	11.0	6.3	6.1	6.8	51.3	32.5	22.7	42.6
Professional/Other		6.0	6.6	5.8	6.2	9.0	5.9	9.8	6.5	6.9	7.7	6.3	5.4	6.9
Median Age at Doctorate		33.9	33.2	32.6	33.5	33.8	32.3	32.9	32.5	32.6	38.0	35.6	35.1	36.7
Median Time Lapse BA-PhD														
Total Time	Yrs	10.8	9.6	9.2	10.4	11.0	9.5	10.2	9.5	9.6	14.3	8.8	9.2	12.3
Registered Time		7.1	6.8	6.1	6.8	7.0	6.9	6.9	6.2	6.3	7.9	6.5	5.7	7.1
Graduate School Support														
Federal Fellow/Trainee	%	15.8	5.4	5.5	12.6	20.0	23.3	4.0	4.6	7.2	20.5	7.9	9.9	16.5
GI Bill		3.4	0.1	0.0	2.5	4.0	0.9	0.0	0.0	0.1	3.3	0.0	0.0	2.1
National Fellowship		3.9	3.8	3.9	3.6	10.0	4.4	2.7	3.2	3.3	7.6	3.2	6.4	6.8
Teaching Assistantship		47.0	51.9	47.0	44.2	38.0	46.1	53.2	50.8	50.4	29.4	34.1	32.9	30.6
Research Assistantship		38.4	48.9	53.4	38.9	31.0	48.4	61.2	62.5	60.2	19.9	31.7	36.1	25.0
Other University		30.3	26.2	24.1	27.1	28.0	32.4	24.9	22.0	23.9	32.1	31.0	24.0	29.9
Business/Employer		5.8	3.8	3.8	5.0	2.0	6.6	4.6	2.5	3.4	6.6	3.2	4.8	5.8
Self/Family Sources		83.0	69.8	51.2	71.7	81.0	71.2	63.7	51.5	55.8	86.0	68.3	50.5	75.1
Guaranteed Student Loan		31.1	16.7	0.8	23.4	35.0	29.0	12.4	0.5	6.3	35.5	34.9	1.0	26.7
Other Loans		10.4	5.6	2.1	8.1	12.0	11.0	3.3	0.9	2.7	15.6	14.3	3.2	12.3
Other		3.8	7.7	18.4	6.1	6.0	3.2	3.6	10.0	8.1	4.1	12.7	29.1	11.1
Unknown		0.8	1.6	2.0	7.3	1.0	1.1	1.5	1.4	1.6	0.6	1.6	1.3	1.1
Postdoctoral Plans														
Postdoctoral Study	%	21.4	23.3	33.0	22.0	24.0	34.3	26.0	37.1	34.9	12.6	15.1	24.0	15.5
Planned Employment		76.4	72.2	61.8	69.0	71.0	61.7	69.0	58.0	60.1	84.8	81.0	71.6	81.0
Educ. Institution		44.1	39.3	38.3	40.1	45.0	24.9	27.9	35.2	32.7	54.5	50.8	43.5	51.3
Industry/Business		15.2	23.0	11.6	14.0	8.0	24.1	32.5	13.9	18.0	7.1	12.7	5.4	7.3
Government		8.0	4.4	6.9	7.1	9.0	6.3	4.4	5.1	5.1	11.2	8.7	14.4	11.7
Non-profit		5.7	2.5	1.6	4.5	3.0	3.8	1.5	1.4	1.8	5.5	4.8	3.2	4.8
Other & Unknown		3.6	3.0	3.4	3.3	6.0	2.7	2.7	2.5	2.5	6.5	4.0	5.1	5.9
Postdoc Status Unknown	%	2.2	4.5	5.2	9.0	5.0	4.0	5.0	4.9	5.0	2.7	4.0	4.5	3.5
Definite Postdoct Study	%	16.4	13.7	21.0	16.0	19.0	23.9	15.3	23.4	22.2	7.9	4.8	10.9	8.3
Seeking Postdoct Study		5.0	9.6	12.0	6.1	5.0	10.4	10.7	13.7	12.8	4.6	10.3	13.1	7.3
Definite Employment		56.9	43.4	43.0	50.4	45.0	40.2	43.6	39.7	40.3	62.3	34.1	45.7	55.2
Seeking Employment		19.5	28.8	18.8	18.6	26.0	21.4	25.4	18.3	19.8	22.4	46.8	25.9	25.8
Employment Location after Doctorate														
U.S.	%[4/]	92.4	74.6	35.6	83.5	84.4	90.1	78.9	43.6	55.6	86.5	60.5	16.8	70.5
Foreign		1.2	16.9	58.3	10.0	2.2	3.3	11.4	50.0	37.5	0.4	30.2	77.6	18.2
Unknown		6.4	8.6	6.1	6.4	13.3	6.6	9.6	6.4	6.9	13.1	9.3	5.6	11.3

1/ See discussion on page 41 for description of past changes in the survey question on racial/ethnic group.
2/ Includes individuals who did not report their citizenship at time of doctorate.
3/ Includes mathematics and computer sciences.
4/ The base for this percentage is the number of doctorates in the column caption group who have found definite employment.

APPENDIX A, TABLE 5 (Continued)

White				Puerto Rican	Mexican-American				Other Hispanic				Other & Unknown		
U.S.	Non-U.S.		Total	Total	U.S.	Non-U.S.		Total	U.S.	Non-U.S.		Total	U.S.	Non-U.S.	Total
	Perm.	Temp.				Perm.	Temp.			Perm.	Temp.				
20538	592	1504	22674[2/]	137	182	11	11	204[2/]	248	96	360	709[2/]	433	513	2966[2/]
59.7	69.1	80.7	61.3	56.2	54.4	63.6	90.9	56.9	49.6	66.7	77.2	66.0	69.5	85.8	72.9
40.3	30.9	19.3	38.7	43.8	45.6	36.4	9.1	43.1	50.4	33.3	22.8	34.0	30.5	14.2	27.1
13.2	15.2	23.4	13.9	10.9	8.2	0.0	9.1	7.8	9.3	11.5	21.9	16.2	22.2	17.3	16.0
6.0	21.1	23.1	7.5	8.0	2.7	0.0	18.2	3.4	3.6	10.4	16.1	10.9	6.9	22.8	14.2
19.3	13.9	15.2	18.8	14.6	7.7	18.2	45.5	10.3	15.3	24.0	23.1	20.5	16.9	16.6	15.2
19.9	18.8	14.2	19.5	19.7	23.6	27.3	0.0	22.5	24.2	17.7	18.3	20.2	19.9	15.0	18.7
12.2	14.4	9.4	12.0	10.2	11.0	36.4	0.0	11.8	16.9	19.8	6.4	11.8	11.3	9.7	11.8
23.5	11.7	8.9	22.2	32.8	43.4	9.1	27.3	40.7	25.8	13.5	11.1	16.8	18.9	13.8	17.0
6.1	5.1	5.7	6.0	3.6	3.3	9.1	0.0	3.4	4.8	3.1	3.1	3.7	3.9	4.7	7.0
33.8	33.0	31.9	33.6	35.2	35.6	37.0	35.5	35.7	35.1	33.9	33.7	34.1	33.0	33.4	33.1
10.7	9.2	8.5	10.5	12.2	12.2	11.5	9.3	12.1	10.8	9.6	9.4	9.9	9.7	9.6	9.6
7.0	6.8	6.1	7.0	7.4	7.9	6.7	6.5	7.7	6.9	6.7	5.5	6.2	6.5	6.2	6.4
15.1	6.3	5.5	14.2	29.9	35.2	27.3	18.2	33.8	21.0	5.2	7.5	12.0	13.6	5.8	3.1
3.5	0.2	0.0	3.2	0.7	3.8	0.0	0.0	3.4	1.6	0.0	0.0	0.6	3.2	0.0	0.5
3.6	3.7	4.1	3.6	13.9	7.7	0.0	0.0	6.9	8.1	10.4	6.4	7.5	1.6	4.5	1.0
48.1	56.8	49.5	48.4	31.4	41.2	54.5	27.3	41.2	42.3	49.0	37.8	40.8	41.6	34.3	12.1
39.1	43.8	48.5	39.8	29.9	32.4	45.5	45.5	33.8	32.7	43.8	43.3	39.6	35.6	36.6	11.8
30.2	27.0	28.2	30.0	34.3	29.7	81.8	27.3	32.4	27.8	20.8	27.2	26.8	28.2	19.3	7.7
5.9	3.7	4.6	5.7	8.0	1.6	0.0	9.1	2.0	5.2	2.1	7.8	6.1	3.9	4.1	1.3
83.5	75.0	55.1	81.3	76.6	84.1	90.9	27.3	81.4	84.3	72.9	51.1	65.7	67.2	41.5	17.2
31.0	16.2	1.3	28.6	40.1	31.3	9.1	0.0	28.4	35.5	20.8	0.3	15.9	23.6	2.5	3.9
10.1	5.1	3.5	9.5	18.2	13.7	9.1	9.1	13.2	14.1	12.5	4.7	9.2	9.0	1.9	1.7
3.8	8.3	24.8	5.3	3.6	6.6	9.1	45.5	8.8	2.8	12.5	30.8	18.3	2.8	26.1	5.1
0.5	1.4	1.5	0.7	0.7	0.5	0.0	0.0	0.5	0.4	2.1	2.5	1.7	12.7	7.0	70.6
21.4	21.3	30.3	22.0	16.1	14.8	9.1	18.2	14.7	21.4	30.2	28.9	26.5	24.2	27.9	8.5
76.7	74.8	65.6	75.8	83.9	82.4	90.9	81.8	82.8	78.2	66.7	67.8	71.2	62.4	60.2	20.0
44.2	44.8	40.4	43.9	58.4	47.3	63.6	54.5	48.5	50.8	50.0	46.9	48.7	31.9	38.4	11.7
15.4	21.1	11.6	15.3	8.8	13.2	0.0	9.1	12.3	8.9	7.3	6.9	7.8	15.2	7.4	3.5
7.9	3.4	7.8	7.7	8.0	14.3	0.0	0.0	12.7	9.3	2.1	6.9	7.1	6.5	8.8	2.5
5.8	2.9	1.9	5.4	4.4	6.6	18.2	0.0	6.9	3.2	3.1	1.4	2.3	3.9	1.2	0.8
3.4	2.7	3.8	3.4	4.4	1.1	9.1	18.2	2.5	6.0	4.2	5.6	5.5	4.8	4.5	1.6
1.9	3.9	4.2	2.1	0.0	2.7	0.0	0.0	2.5	0.4	3.1	3.3	2.3	13.4	11.9	71.4
16.5	14.0	20.7	16.7	13.1	10.4	9.1	9.1	10.3	15.7	16.7	19.4	17.8	18.5	15.8	5.5
4.9	7.3	9.6	5.3	2.9	4.4	0.0	9.1	4.4	5.6	13.5	9.4	8.7	5.8	12.1	3.0
57.4	46.8	46.6	56.4	54.7	55.5	45.5	63.6	55.4	56.9	39.6	48.6	50.2	46.4	42.9	14.6
19.3	28.0	18.9	19.5	29.2	26.9	45.5	18.2	27.5	21.4	27.1	19.2	21.0	15.9	17.3	5.4
92.9	77.3	36.9	89.4	89.3	90.1	60.0	28.6	85.0	87.9	65.8	18.3	51.1	89.6	20.5	52.4
1.2	14.8	57.6	4.7	1.3	1.0	40.0	71.4	7.1	0.7	26.3	77.1	41.0	1.0	70.5	38.3
5.9	7.9	5.4	5.9	9.3	8.9	0.0	0.0	8.0	11.3	7.9	4.6	7.9	9.5	9.1	9.2

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX B

Appendix Table B presents the number of doctorate recipients by fine field of doctorate, 1976-1986.

APPENDIX TABLE B Number of Doctorate Recipients by Fine Field, 1976-1986

	Year of Doctorate										
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
TOTAL ALL FIELDS	32946	31715	30875	31237	31016	31353	31095	31216	31277	31211	31770
PHYSICAL SCIENCES	4509	4379	4193	4299	4111	4170	4291	4426	4452	4532	4808
MATHEMATICS	1003	933	838	769	744	728	720	701	698	688	730
Applied Mathematics	105	113	108	111	102	118	108	125	108	116	136
Algebra	116	88	87	88	78	56	60	55	65	55	46
Analysis & Functional Analysis	141	153	118	111	91	105	98	76	71	83	81
Geometry	23	26	22	25	35	29	32	44	27	35	38
Logic	34	17	24	21	24	18	17	21	25	30	23
Number Theory	26	32	18	17	28	24	28	19	27	18	20
Probability & Math Statistics	165	159	168	165	151	163	165	151	181	150	141
Topology	72	70	56	61	57	55	45	44	42	35	34
Computing Theory & Practice	148	101	55	25	13	16	11	12	13	15	10
Operations Research	36	42	43	43	41	36	36	20	27	22	29
Mathematics, General	94	88	92	80	83	77	84	86	78	85	125
Mathematics, Other	43	44	47	22	41	31	36	48	34	44	47
COMPUTER SCIENCE	-	31	121	210	218	232	220	286	295	310	399
Computer Sciences	-	31	121	210	218	232	220	264	256	249	355
Information Sciences & Systems	-	-	-	-	-	-	-	22	39	61	44
PHYSICS AND ASTRONOMY	1237	1150	1067	1108	983	1015	1014	1043	1080	1080	1187
Astronomy	78	63	64	58	52	50	52	50	42	43	52
Astrophysics	72	57	74	57	69	59	50	65	56	57	57
Acoustics	9	12	14	13	23	13	11	14	21	10	15
Atomic and Molecular	116	105	88	72	69	66	96	71	77	58	70
Electron	-	-	-	-	-	-	-	1	2	4	2
Electromagnetism	12	9	10	6	-	-	-	-	-	-	-
Elementary Particles	130	138	135	121	117	119	119	136	138	154	147
Fluids	20	14	13	14	15	14	13	15	11	16	6
Mechanics	4	-	-	-	-	-	-	-	-	-	-
Nuclear	96	94	77	103	73	63	53	90	72	86	89
Optics	50	31	33	46	43	54	42	50	53	51	58
Plasma	75	72	68	62	59	65	69	72	73	55	61
Polymer	-	-	-	-	-	-	-	10	8	11	11
Thermal	4	7	11	7	5	7	-	-	-	-	-
Solid State	282	258	243	243	201	253	235	222	258	248	280
Physics, General	175	173	151	194	165	164	167	150	170	176	222
Physics, Other	114	117	86	112	92	88	107	97	99	111	117
CHEMISTRY	1624	1571	1544	1566	1538	1612	1680	1759	1765	1837	1903
Analytical	152	174	178	207	185	229	190	264	228	285	257
Agricultural and Food	14	6	8	11	-	-	-	-	-	-	-
Inorganic	226	198	201	195	189	188	226	215	233	251	260
Nuclear	25	24	13	14	14	12	20	13	18	7	18
Organic	497	479	454	469	484	494	519	503	525	494	510
Pharmaceutical	55	50	51	43	52	52	55	78	56	60	58
Physical	355	339	310	326	282	275	324	311	329	304	293
Polymer	42	55	57	67	61	62	50	62	63	84	72
Theoretical	48	38	46	50	47	33	32	48	37	48	41
Chemistry, General	144	146	161	126	157	193	175	177	183	214	290
Chemistry, Other	66	62	65	58	67	74	89	88	93	90	104
EARTH, ATMOSPHERIC, & MARINE SCI	645	694	623	646	628	583	657	637	614	617	589
Atmospheric Physics & Chemistry	16	15	22	16	19	15	17	21	11	16	21
Atmospheric Dynamics	14	32	21	26	20	27	22	16	25	21	16
Meteorology	23	-	-	-	-	-	-	17	28	23	27
Atmos & Meteorological Sci, General	-	-	-	-	-	-	-	16	5	10	7
Atmos & Meteorological Sci, Other	23	46	34	42	51	33	26	27	12	10	7
Geology	22	22	28	28	20	27	25	105	124	111	118
Geochemistry	49	57	51	57	51	48	51	48	43	48	37
Geophysics and Seismology	40	73	60	81	71	72	81	75	68	92	89
Geophysics, Solid Earth & Atmos	33	-	-	-	-	-	-	-	-	-	-
Paleontology	43	26	31	36	21	19	24	17	35	23	16
Fuel Technology, Petroleum	4	5	2	4	-	-	-	-	-	-	-
Mineralogy, Petrology	48	60	34	33	47	30	41	24	28	28	17
Stratigraphy, Sedimentation	57	42	32	34	40	42	47	25	16	23	14
Geomorphology & Glacial Geology	29	22	24	14	15	13	21	10	9	13	11
Applied Geology	23	20	15	19	27	21	25	8	7	8	4
Geological Sciences, General	33	44	45	37	48	45	38	15	10	11	12
Geological Sciences, Other	23	31	22	24	21	16	29	21	25	11	12
Environmental Sciences	61	54	45	53	40	54	53	50	45	42	35
Hydrology and Water Resources	15	23	31	20	27	21	24	20	18	17	16
Oceanography	89	113	98	91	85	70	92	87	78	68	78
Marine Sciences	-	9	28	31	25	30	41	22	21	24	22
Physical Sciences, Other	-	-	-	-	-	-	-	13	6	18	30

APPENDIX TABLE B (Continued)

	Year of Doctorate										
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
ENGINEERING	2834	2643	2423	2490	2479	2528	2646	2781	2913	3167	3376
Aerospace, Aeronaut & Astronaut	122	115	103	81	81	97	86	106	119	124	118
Agricultural	37	33	43	66	68	64	48	58	74	60	52
Bioengineering & Biomedical	73	75	79	69	68	64	59	74	70	69	67
Ceramic	24	30	24	24	24	24	20	24	25	19	25
Chemical	314	306	261	287	285	296	306	349	361	440	476
Civil	314	269	236	236	240	287	308	354	351	358	387
Communications	-	-	-	-	-	-	-	25	11	30	23
Computer	119	123	76	78	62	71	72	83	56	56	77
Electrical, Electronics	592	544	463	533	478	478	544	517	593	631	707
Engineering Mechanics	113	102	95	85	91	78	103	68	91	89	94
Engineering Physics	19	20	15	17	18	22	12	10	8	12	13
Engineering Science	-	-	-	-	-	-	-	30	28	31	30
Environmental Health Engineering	74	67	67	66	66	71	60	43	57	33	42
Industrial	67	73	51	82	77	66	79	86	84	92	101
Materials Science	117	125	125	125	143	113	147	157	168	188	187
Mechanical	304	270	282	281	293	282	334	311	336	424	442
Metallurgical	111	93	98	87	106	97	88	87	78	96	93
Mining and Mineral	6	2	7	4	4	8	7	22	16	16	22
Naval Architecture, Marine Eng	-	-	-	-	-	-	-	4	5	8	9
Nuclear	134	105	107	95	112	130	121	103	120	96	97
Ocean	-	-	-	-	-	-	-	12	11	25	14
Operations Research	82	76	84	67	63	80	58	44	50	54	54
Petroleum	17	18	19	24	31	21	27	22	17	24	18
Polymer	-	-	-	-	-	-	-	21	31	40	36
Systems	69	71	63	75	61	68	49	57	52	57	33
Engineering, General	41	33	44	32	42	36	29	30	29	26	55
Engineering, Other	85	93	81	76	66	75	89	84	72	69	104
LIFE SCIENCES	5026	4920	5040	5223	5461	5611	5705	5545	5749	5759	5720
BIOLOGICAL SCIENCES	3573	3484	3516	3646	3803	3804	3889	3734	3875	3771	3791
Biochemistry	617	609	607	603	673	645	649	646	606	579	571
Biophysics	123	141	110	133	108	99	91	88	90	69	72
Bacteriology	-	-	-	-	-	-	-	10	12	17	12
Plant Genetics	-	-	-	-	-	-	-	19	20	31	19
Plant Pathology	-	-	-	-	-	-	-	29	30	38	28
Plant Physiology	62	43	43	57	52	68	56	67	70	58	51
Botany, Other	182	158	148	141	144	147	146	116	126	120	121
Anatomy	133	116	144	151	147	156	163	104	102	134	85
Biometrics & Biostatistics	46	52	45	44	42	48	59	45	49	40	30
Cell Biology	46	37	33	39	44	47	41	118	123	100	130
Ecology	140	163	170	173	169	198	173	183	202	200	183
Hydrobiology	13	14	3	10	-	-	-	-	-	-	-
Embryology	13	19	15	14	18	20	10	13	15	15	9
Endocrinology	-	-	-	-	-	-	-	28	30	17	17
Entomology	145	153	146	162	161	143	170	141	156	173	170
Immunology	93	101	94	134	125	148	151	154	133	121	146
Molecular Biology	148	131	172	140	183	187	223	225	275	277	297
Microbiology & Bacteriology	362	312	349	349	365	355	324	-	-	-	-
Microbiology	-	-	-	-	-	-	-	309	344	287	325
Neurosciences	-	-	-	-	-	-	117	134	145	156	120
Nutritional Sciences	85	82	90	107	90	99	120	111	109	113	122
Parasitology	19	17	13	21	22	18	14	9	30	21	25
Toxicology	-	-	-	-	-	-	-	60	97	98	104
Human & Animal Genetics	-	-	-	-	-	-	-	95	82	105	91
Genetics	143	141	126	141	157	157	176	-	-	-	-
Human & Animal Pathology	94	99	90	85	108	106	97	96	87	108	91
Human & Animal Pharmacology	205	196	216	220	257	280	276	217	237	231	240
Human & Animal Physiology	285	321	315	314	340	327	309	245	237	239	238
Zoology, Other	258	254	231	249	226	198	199	192	158	147	155
Biological Sciences, General	190	178	191	187	209	204	196	174	190	190	213
Biological Sciences, Other	171	147	165	172	163	154	129	106	120	87	126
HEALTH SCIENCES	503	511	512	568	586	657	686	639	719	730	772
Audiology & Speech Pathology	145	146	143	139	123	140	129	113	104	99	82
Environmental Health	28	25	31	40	40	44	39	38	40	31	39
Public Health	-	-	1	-	1	4	3	54	53	103	103
Public Health & Epidemiology	116	109	98	121	127	157	159	-	-	-	-
Epidemiology	-	-	-	-	-	-	-	76	103	76	81
Hospital Administration	2	8	-	-	-	-	-	-	-	-	-
Medicine and Surgery	8	-	-	-	-	-	-	-	-	-	-
Nursing	-	32	32	53	77	89	112	126	161	184	215
Pharmacy	63	49	72	69	70	69	81	81	102	106	106
Veterinary Medicine	37	24	27	41	41	41	41	45	46	51	41
Health Sciences, General	14	18	15	19	15	24	16	20	14	13	28
Health Sciences, Other	90	100	93	86	92	89	106	86	96	67	77
AGRICULTURAL SCIENCES	950	925	1012	1009	1072	1150	1130	1172	1155	1258	1157
Agricultural Economics	162	143	159	154	160	168	179	157	158	147	158
Animal Breeding & Genetics	-	-	-	-	-	-	-	25	28	28	25
Animal Husbandry	17	25	21	26	25	19	22	-	-	-	-
Animal Nutrition	119	101	101	112	119	149	133	56	71	78	65
Animal Sciences, Other	-	-	-	-	-	-	-	92	90	95	91

APPENDIX TABLE B (Continued)

	Year of Doctorate										
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Agronomy	146	123	137	138	151	177	159	149	137	158	159
Plant Breeding & Genetics	-	-	-	-	-	-	-	71	78	88	78
Plant Pathology	83	82	89	88	118	99	114	92	57	89	85
Plant Sciences, Other	-	-	-	-	-	-	-	16	20	21	22
Food Sciences	91	107	117	107	102	104	110	141	113	136	121
Soil Sciences	69	72	97	71	79	90	83	85	99	97	103
Horticulture Science	51	60	65	69	73	85	88	72	66	76	61
Fish and Wildlife	55	66	61	66	73	66	65	-	-	-	-
Fisheries Science	-	-	-	-	-	-	-	36	45	36	32
Wildlife Management	-	-	-	-	-	-	-	31	31	38	20
Forestry Science	79	66	88	87	80	95	78	90	94	105	88
Agriculture, General	9	6	6	7	3	5	5	7	1	5	4
Agriculture, Other	69	74	71	84	89	93	94	52	67	61	45
SOCIAL SCIENCES (INCL PSYCH)	6214	6072	6039	5961	5856	6142	5836	6058	5903	5721	5841
Anthropology	428	385	399	383	370	369	333	373	335	353	381
Area Studies	30	18	26	24	22	20	19	20	23	19	28
Criminology	-	-	-	-	30	35	36	49	41	38	24
Demography	-	-	-	-	-	-	-	26	19	25	15
Economics	855	811	778	780	745	808	737	792	767	786	836
Econometrics	30	29	23	22	22	17	24	21	27	27	25
Geography	155	155	158	129	131	109	106	121	114	120	120
International Relations	123	96	92	81	80	87	77	76	95	78	76
Political Sci & Government	628	614	603	522	505	445	459	397	419	406	414
Political Sci & Public Admin	40	-	-	-	-	-	-	-	-	-	-
Public Policy Studies	-	-	-	-	-	-	-	69	54	70	80
Sociology	734	725	610	632	601	605	568	525	515	461	492
Statistics	35	35	46	23	33	40	43	47	39	60	65
Urban Studies	92	80	76	91	79	94	93	74	81	75	50
Social Sciences, General	35	27	33	33	32	22	34	17	17	17	36
Social Sciences, Other	146	108	140	150	108	133	149	142	127	114	128
PSYCHOLOGY	2883	2989	3055	3091	3098	3358	3158	3309	3230	3072	3071
Clinical	883	936	1061	1069	1106	1259	1167	1210	1174	1158	1144
Cognitive	-	-	-	-	-	-	-	65	77	76	70
Comparative	28	22	20	21	8	11	12	11	13	11	14
Counseling	267	269	278	315	299	351	348	432	463	431	448
Developmental	190	203	208	221	207	201	192	219	207	176	182
Experimental	357	337	299	293	307	283	240	209	169	165	147
Educational	124	136	145	163	137	180	140	154	210	127	107
Industrial & Organizational	73	81	74	87	66	87	83	90	106	101	109
Personality	62	63	41	42	43	49	36	32	25	21	16
Physiological	133	132	126	102	108	102	90	94	73	79	73
Psychometrics	27	19	15	25	21	27	8	10	6	10	11
Quantitative	-	-	-	-	-	-	-	14	17	16	23
School	143	148	125	125	176	133	166	121	89	92	116
Social	209	202	204	216	190	180	179	191	157	167	141
Psychology, General	218	262	299	207	210	279	242	287	264	251	294
Psychology, Other	169	179	160	205	220	216	255	170	180	191	176
HUMANITIES	4881	4562	4231	4139	3867	3748	3558	3496	3531	3428	3461
History, American	383	342	321	302	285	228	271	224	240	176	196
History, European	288	261	215	218	196	166	158	168	150	143	121
History of Science	36	29	25	28	21	26	29	13	24	23	24
History, General	-	-	-	-	-	-	-	58	76	85	84
History, Other	388	329	291	281	243	272	234	153	127	116	138
Classics	79	60	67	56	54	62	60	44	57	44	51
Comparative Literature	157	152	114	144	107	132	118	124	133	133	101
Linguistics	152	190	175	156	182	176	191	164	160	176	189
Speech and Debate	98	61	69	53	63	38	38	48	41	38	30
Letters, General	-	-	-	-	-	-	-	3	14	13	19
Letters, Other	-	-	-	-	-	-	1	19	31	26	37
American Studies	86	93	82	84	81	87	64	99	76	87	68
Archeology	22	23	32	35	26	28	21	30	31	24	28
Art History & Criticism	145	152	150	166	144	158	138	150	141	137	126
Music	353	404	368	419	402	368	402	391	445	447	476
Philosophy	382	331	290	278	255	277	251	241	215	238	248
Religion	174	176	189	196	170	162	149	173	178	181	180
Theatre	-	85	102	97	94	103	94	108	101	92	87
LANGUAGE AND LITERATURE	2049	1804	1662	1555	1486	1396	1259	1219	1225	1163	1166
American	236	220	212	206	209	145	154	173	190	203	215
English	978	856	813	703	742	675	615	542	543	525	506
French	242	211	183	187	162	167	119	121	108	86	102
German	178	140	103	116	99	88	74	77	80	62	79
Italian	24	22	23	20	10	16	17	22	17	14	15
Spanish	234	199	173	181	145	184	177	161	144	145	122
Russian	58	56	52	42	32	28	24	24	33	28	28
Slavic	-	-	-	-	-	-	-	9	12	10	8
Chinese	-	-	-	-	-	-	-	16	13	14	13
Japanese	-	-	-	-	-	-	-	5	12	13	9
Hebrew	-	-	-	-	-	-	-	11	13	9	11
Arabic	-	-	-	-	-	-	-	8	8	5	9

APPENDIX TABLE B (Continued)

	Year of Doctorate										
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Other Languages	99	100	103	100	87	93	79	50	52	49	49
Humanities, General	27	21	25	19	12	23	28	17	22	27	23
Humanities, Other	62	49	54	52	46	46	52	50	44	59	69
PROFESSIONAL FIELDS	1710	1660	1741	1717	1634	1622	1784	1725	1918	1857	1936
Business Administration	739	671	713	715	640	624	685	750	869	790	901
Accounting	-	-	-	-	-	-	-	163	164	150	157
Banking and Finance	-	-	-	-	-	-	-	94	123	104	126
Business Admin & Management	-	-	-	-	-	-	-	179	175	174	224
Business Economics	-	-	-	-	-	-	-	25	30	20	28
Marketing Mgmt & Research	-	-	-	-	-	-	-	73	126	94	110
Business Statistics	-	-	-	-	-	-	-	8	7	9	3
Operations Research	-	-	-	-	-	-	-	38	46	45	46
Organizational Behavior	-	-	-	-	-	-	-	53	70	68	56
Business & Mgmt, General	-	-	-	-	-	-	-	35	49	49	55
Business & Mgmt, Other	739	671	713	715	640	624	685	82	79	77	96
COMMUNICATIONS	295	302	292	285	270	240	266	250	255	266	258
Communications Research	-	-	-	-	-	-	-	51	66	55	79
Journalism	15	18	22	17	17	18	18	20	17	22	18
Radio and Television	-	-	-	-	-	-	-	27	20	19	13
Communications, General	-	-	-	-	-	-	-	60	68	89	75
Communications, Other	280	284	270	268	253	222	248	92	84	81	73
OTHER PROFESSIONAL FIELDS	676	687	736	717	724	758	833	725	794	801	777
Architecture, Environ Design	-	-	-	-	-	-	-	34	25	36	27
Home Economics	68	76	81	88	90	85	98	79	107	90	88
Law	20	27	22	24	21	28	21	19	24	25	31
Library & Archival Science	58	73	57	66	66	62	83	51	68	72	57
Public Administration	96	169	156	164	145	147	173	113	127	112	85
Social Work	156	167	173	154	179	213	218	190	231	219	231
Theology	190	155	227	193	195	200	206	222	204	229	228
Professional Fields, General	-	-	-	-	-	-	-	-	2	-	-
Professional Fields, Other	88	20	20	28	28	23	34	17	6	18	30
EDUCATION	7725	7455	7194	7385	7586	7497	7251	7163	6796	6722	6602
Curriculum and Instruction	786	759	808	874	838	815	811	861	869	825	787
Educational Admin & Supervision	1683	1516	1455	1500	1536	1659	1474	1622	1559	1614	1622
Educational Media	92	82	92	92	75	77	76	88	83	101	79
Educational Measures & Statistics	104	118	97	104	89	90	94	-	-	-	-
Educational Statistics & Research	-	-	-	-	-	-	-	86	105	74	57
Educational Testing, Eval & Meas	-	-	-	-	-	-	-	51	56	44	47
Educational Psychology	488	498	445	415	476	445	454	274	233	390	323
School Psychology	-	-	-	-	-	-	-	88	110	102	92
Social Foundations	246	230	237	242	214	209	214	142	151	135	122
Special Education	316	324	311	316	346	312	347	349	312	270	273
Student Counseling, Personnel Serv	695	662	560	607	594	549	540	506	391	397	315
Higher Education	652	715	615	683	685	671	653	634	656	588	609
Pre-elementary Education	-	-	-	-	74	90	78	63	54	65	84
Elementary Education	218	187	217	169	162	180	149	111	97	122	94
Junior High Education	-	-	-	-	-	-	-	1	-	1	1
Secondary Education	179	142	134	154	168	136	104	87	62	68	86
Adult & Continuing Education	191	173	200	169	235	233	257	221	217	207	223
TEACHING FIELDS	1418	1439	1352	1411	1471	1437	1333	1327	1170	1118	1141
Agricultural Education	31	25	35	24	39	43	35	47	47	40	39
Art Education	58	55	48	50	45	63	55	58	41	43	43
Business Education	72	65	62	66	52	50	44	62	52	52	50
English Education	93	69	80	80	76	64	67	76	72	68	79
Foreign Languages Education	30	36	39	35	36	29	31	25	25	30	36
Physical Educ, Health & Rec	337	333	323	346	365	368	351	-	-	-	-
Health Education	-	-	-	-	-	-	-	99	93	89	81
Home Economics Education	28	31	26	29	27	25	33	25	26	21	17
Industrial Arts Education	45	39	43	29	27	27	39	19	27	13	20
Mathematics Education	96	98	57	85	74	62	50	62	64	65	72
Music Education	99	89	85	88	110	76	103	112	92	81	94
Nursing Education	-	-	-	-	41	23	25	17	21	21	40
Physical Education	-	-	-	-	-	-	-	235	219	220	210
Reading Education	112	134	142	151	160	193	153	169	142	113	134
Science Education	106	128	101	93	96	107	86	78	77	88	65
Social Science Education	54	49	46	65	52	49	29	39	22	24	22
Speech Education	25	14	20	16	10	12	12	2	10	7	5
Trade & Industrial Education	175	211	197	201	229	213	191	138	117	82	86
Other Teaching Fields	57	63	48	53	32	33	29	64	23	61	48
Education, General	416	396	425	410	427	405	419	349	311	293	352
Education, Other	241	214	246	239	196	189	248	303	360	308	295
OTHER AND UNSPECIFIED	47	24	14	23	22	35	24	22	15	25	26

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX C: Demographic Trends

Appendix Table C is divided into six broad field sections, which appear on separate pages; each broad field section is further subdivided into five cluster fields, or subfields. The sections are as follows:

A. Physical Sciences
  1. Physics and Astronomy
  2. Chemistry
  3. Earth, Atmospheric, and Marine Sciences
  4. Mathematics
  5. Computer Sciences

B. Engineering
  1. Electrical/Electronics
  2. Chemical
  3. Civil
  4. Mechanical
  5. Other

C. Life Sciences
  1. Biochemistry
  2. Microbiology and Bacteriology
  3. Other Biosciences
  4. Agricultural Sciences
  5. Health Sciences

D. Social Sciences
  1. Economics and Econometrics
  2. Political Science and International Relations
  3. Clinical/Counseling/School Psychology
  4. Other Psychology
  5. Other Social Sciences

E. Humanities
  1. History
  2. Philosophy
  3. English and American Language and Literature
  4. Foreign Languages and Literature
  5. Other Humanities

F. Education and Professional Fields
  1. Education, Nonteaching Fields
  2. Teaching, Science Fields
  3. Teaching, Other Fields
  4. Business and Management
  6. Other Professional Fields

Appendix Table C highlights the demographic characteristics of doctorate recipients in 30 selected fields between 1958 and 1986, the whole of the period in which the Survey of Earned Doctorates has been conducted.

Line 1 of each cluster, or subfield, displays the the number of doctorate recipients earned in that year.

Lines 2 and 3 show the proportion of male and female recipients.

Lines 4-8 show the proportion of degrees earned by each racial group. This proportion is based on the number of recipients who reported their race/ethnicity. Note that racial data were not collected prior to 1973.

Lines 9-11 show the proportion of degrees earned by each of the citizenship groups. Here the proportion is based on the total number of recipients, with the unknown citizenship group not displayed. Thus, these percentages will sum to less than 100 percent.

APPENDIX TABLE C Demographic Trends of Doctorate Recipients in 30 Selected Fields, 1958-1986

PHYSICAL SCIENCES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
PHYSICS AND ASTRONOMY																
Total	N	497	530	710	866	1061	1436	1655	1634	1339	1237	1067	983	1014	1080	1187
Men	%	97.6	98.3	98.0	98.4	97.9	97.6	97.3	97.2	95.7	95.6	95.1	93.2	91.7	92.7	90.8
Women		2.4	1.7	2.0	1.6	2.1	2.4	2.7	2.8	4.3	4.4	4.9	6.8	8.3	7.3	9.2
American Indian*	%	-	-	-	-	-	-	-	-	0.1	0.0	0.1	0.0	0.3	0.1	0.0
Asian		-	-	-	-	-	-	-	-	15.0	13.1	16.1	16.3	18.2	20.0	23.8
Black		-	-	-	-	-	-	-	-	0.3	0.7	1.3	0.9	1.9	1.4	1.0
Hispanic		-	-	-	-	-	-	-	-	1.0	1.0	2.2	3.1	2.8	3.0	3.9
White		-	-	-	-	-	-	-	-	83.5	85.2	80.3	79.6	76.8	75.5	71.3
U.S. Citizens	%	88.5	86.6	81.7	82.7	80.2	82.6	80.8	78.2	71.4	73.6	75.4	72.7	69.6	68.4	58.3
Permanent Visas		2.6	3.2	2.7	3.1	3.8	4.4	6.0	7.6	7.3	6.1	6.0	5.2	3.5	3.3	3.4
Temporary Visas		7.8	9.1	13.7	10.5	12.2	10.7	11.3	12.8	17.2	18.4	17.0	19.2	23.9	24.6	30.7
CHEMISTRY																
Total	N	965	1078	1138	1351	1594	1803	2238	2019	1797	1624	1544	1538	1680	1765	1903
Men	%	95.8	95.5	94.7	93.8	93.9	92.2	91.9	89.9	90.2	88.4	87.4	83.4	83.8	81.9	79.2
Women		4.2	4.5	5.3	6.2	6.1	7.8	8.1	10.1	9.8	11.6	12.6	16.6	16.3	18.1	20.8
American Indian		-	-	-	-	-	-	-	-	0.1	0.0	0.2	0.2	0.0	0.2	0.3
Asian		-	-	-	-	-	-	-	-	14.1	15.2	17.9	20.0	17.3	18.7	21.5
Black		-	-	-	-	-	-	-	-	2.1	1.8	2.7	1.6	1.7	2.5	2.0
Hispanic		-	-	-	-	-	-	-	-	0.8	0.9	2.3	1.7	1.5	3.2	2.8
White		-	-	-	-	-	-	-	-	83.0	82.1	76.9	76.5	79.5	75.4	73.5
U.S. Citizens		89.1	88.5	87.7	84.8	82.9	84.9	83.7	79.8	77.0	77.8	76.0	76.0	76.5	75.5	69.3
Permanent Visas		2.7	2.2	2.0	3.9	3.6	3.5	7.3	9.8	8.8	8.7	7.7	6.5	5.0	4.7	4.9
Temporary Visas		6.6	8.8	9.7	10.4	11.1	9.9	7.9	8.8	10.2	12.5	14.0	15.4	15.7	16.9	20.7
EARTH, ATMOSPHERIC, AND MARINE SCIENCES																
Total	N	190	253	249	310	404	442	510	604	629	645	623	628	657	614	589
Men	%	97.9	98.8	98.0	98.4	97.0	97.5	96.9	96.4	94.4	90.2	90.2	89.8	84.3	82.7	83.0
Women		2.1	1.2	2.0	1.6	3.0	2.5	3.1	3.6	5.6	9.8	9.8	10.2	15.7	17.3	17.0
American Indian	%	-	-	-	-	-	-	-	-	0.4	0.0	0.0	0.3	0.0	0.0	0.4
Asian		-	-	-	-	-	-	-	-	7.9	8.5	8.4	8.3	10.3	10.9	12.2
Black		-	-	-	-	-	-	-	-	0.9	0.8	1.4	0.8	1.6	1.5	0.8
Hispanic		-	-	-	-	-	-	-	-	0.7	0.7	1.9	3.4	2.4	2.2	1.3
White		-	-	-	-	-	-	-	-	90.1	90.0	88.2	87.2	85.7	85.3	85.4
U.S. Citizens	%	83.2	81.4	88.8	81.3	82.7	79.2	78.4	78.3	72.7	78.8	83.1	81.5	80.4	77.2	71.6
Permanent Visas		1.1	4.0	1.2	3.5	2.5	3.8	6.5	9.6	7.5	5.0	3.5	4.1	4.4	4.1	4.1
Temporary Visas		15.3	13.8	9.2	12.3	12.9	14.9	13.9	10.6	16.1	14.9	10.9	12.7	12.3	17.3	18.0
MATHEMATICS																
Total	N	238	291	388	588	769	971	1225	1281	1211	1003	838	744	720	698	730
Men	%	94.1	94.8	94.3	94.4	93.9	95.2	93.7	92.5	90.5	88.7	85.7	87.2	86.7	83.5	83.4
Women		5.9	5.2	5.7	5.6	6.1	4.8	6.3	7.5	9.5	11.3	14.3	12.8	13.3	16.5	16.6
American Indian		-	-	-	-	-	-	-	-	0.2	0.0	0.1	0.0	0.1	0.5	0.2
Asian		-	-	-	-	-	-	-	-	13.3	12.0	13.4	15.6	16.4	21.5	24.0
Black		-	-	-	-	-	-	-	-	1.9	0.8	1.9	2.0	1.8	1.2	1.8
Hispanic		-	-	-	-	-	-	-	-	0.7	1.5	3.2	2.3	3.6	5.8	6.0
White		-	-	-	-	-	-	-	-	84.0	85.7	81.3	80.1	78.1	71.1	68.0
U.S. Citizens	%	85.3	80.1	79.6	82.7	82.1	82.1	83.1	80.4	72.3	74.6	73.9	69.9	63.6	58.3	50.3
Permanent Visas		4.6	3.8	2.6	2.0	3.3	4.5	4.7	5.1	5.9	5.5	5.6	8.3	5.7	5.2	4.9
Temporary Visas		8.4	15.1	16.8	13.6	12.6	11.5	10.9	13.2	18.5	18.2	18.5	18.7	26.7	33.2	37.3
COMPUTER SCIENCES**																
Total	N	-	-	-	-	-	-	-	-	-	-	121	218	220	295	399
Men	%	-	-	-	-	-	-	-	-	-	-	90.9	90.4	90.9	87.5	87.7
Women		-	-	-	-	-	-	-	-	-	-	9.1	9.6	9.1	12.5	12.3
American Indian		-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.5	0.0	0.0
Asian		-	-	-	-	-	-	-	-	-	-	15.2	11.9	20.4	26.4	29.7
Black		-	-	-	-	-	-	-	-	-	-	1.0	0.0	0.5	2.2	1.1
Hispanic		-	-	-	-	-	-	-	-	-	-	1.0	2.1	1.9	1.8	3.1
White		-	-	-	-	-	-	-	-	-	-	82.9	86.0	76.8	69.7	66.0
U.S. Citizens	%	-	-	-	-	-	-	-	-	-	-	70.2	71.6	65.0	60.3	50.9
Permanent Visas		-	-	-	-	-	-	-	-	-	-	4.1	6.0	5.5	5.8	11.8
Temporary Visas		-	-	-	-	-	-	-	-	-	-	21.5	19.7	26.8	30.2	30.6

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* Respondents were first asked to identify their racial/ethnic status in 1973. See discussion on page 41 for description of past changes in the survey question on racial/ethnic group. The percentage is based on the total of doctorate recipients who reported racial/ethnic status.

** Computer Sciences was added to the Specialties List in 1977.

APPENDIX TABLE C (Continued)

ENGINEERING

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
ELECTRICAL/ELECTRONICS																
Total	N	146	201	296	442	569	741	857	815	678	592	463	478	544	593	707
Men	%	99.3	99.5	99.7	99.1	99.6	100.0	99.6	99.4	99.6	98.8	97.4	97.5	96.5	97.6	95.3
Women		0.7	0.5	0.3	0.9	0.4	0.0	0.4	0.6	0.4	1.2	2.6	2.5	3.5	2.4	4.7
American Indian	%	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Asian		-	-	-	-	-	-	-	-	22.3	24.5	27.6	29.9	37.4	39.1	34.3
Black		-	-	-	-	-	-	-	-	1.6	2.1	1.0	2.3	1.6	0.9	1.3
Hispanic		-	-	-	-	-	-	-	-	0.2	1.1	3.1	2.7	3.2	2.9	2.4
White		-	-	-	-	-	-	-	-	75.9	72.2	68.3	65.1	57.7	57.0	61.7
U.S. Citizens	%	77.4	76.6	78.4	79.6	71.0	77.7	77.8	69.6	58.3	57.4	52.7	56.5	44.3	43.0	41.2
Permanent Visas		7.5	8.5	5.7	6.6	8.3	8.8	10.9	17.1	15.5	13.9	12.7	10.9	11.4	9.9	9.9
Temporary Visas		13.0	14.4	15.2	12.9	17.4	12.6	10.9	12.5	18.4	26.0	30.5	29.1	38.1	41.8	38.9
CHEMICAL ENGINEERING																
Total	N	133	181	240	276	367	368	445	385	388	314	261	285	306	361	476
Men	%	99.2	100.0	99.6	99.3	99.5	99.2	99.6	99.5	97.9	97.8	98.1	95.1	94.4	93.1	88.9
Women		0.8	0.0	0.4	0.7	0.5	0.8	0.4	0.5	2.1	2.2	1.9	4.9	5.6	6.9	11.1
American Indian		-	-	-	-	-	-	-	-	0.0	0.0	0.4	0.0	0.0	0.6	0.0
Asian		-	-	-	-	-	-	-	-	28.1	32.6	32.5	42.0	39.1	40.5	40.6
Black		-	-	-	-	-	-	-	-	0.9	0.8	0.8	2.2	2.5	3.3	1.0
Hispanic		-	-	-	-	-	-	-	-	2.1	2.3	5.2	3.3	5.0	3.0	2.9
White		-	-	-	-	-	-	-	-	68.8	64.4	61.0	52.4	53.4	52.6	55.6
U.S. Citizens	%	88.7	76.2	77.9	81.2	80.1	76.6	69.7	66.2	50.8	48.7	48.7	43.5	44.4	46.3	46.0
Permanent Visas		4.5	2.8	4.2	7.2	3.8	6.3	18.4	18.4	19.6	15.6	17.6	14.0	12.1	8.9	10.7
Temporary Visas		5.3	19.3	17.9	10.1	12.5	16.3	11.7	14.5	27.3	32.2	31.8	39.6	37.3	40.4	36.8
CIVIL ENGINEERING																
Total	N	52	62	125	193	237	301	311	362	324	314	236	240	308	351	387
Men	%	100.0	98.4	100.0	99.5	100.0	100.0	99.7	99.7	99.1	98.7	97.5	97.5	96.1	94.6	95.1
Women		0.0	1.6	0.0	0.5	0.0	0.0	0.3	0.3	0.9	1.3	2.5	2.5	3.9	5.4	4.9
American Indian		-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Asian		-	-	-	-	-	-	-	-	32.0	32.3	30.4	24.8	33.5	34.3	35.2
Black		-	-	-	-	-	-	-	-	0.4	1.9	3.1	3.2	3.6	2.8	3.5
Hispanic		-	-	-	-	-	-	-	-	2.5	0.0	7.6	6.8	2.5	2.5	5.6
White		-	-	-	-	-	-	-	-	65.1	65.8	58.9	65.3	60.5	60.1	55.7
U.S. Citizens	%	69.2	62.9	54.4	63.7	54.4	59.8	53.4	52.8	40.1	39.5	38.6	40.8	35.7	35.3	31.5
Permanent Visas		9.6	14.5	6.4	7.8	8.9	11.3	18.6	23.5	17.6	15.9	11.4	10.0	8.8	11.4	11.6
Temporary Visas		21.2	22.6	36.0	25.9	33.8	25.9	27.7	23.5	30.9	39.8	46.6	46.7	51.3	47.6	48.8
MECHANICAL ENGINEERING																
Total	N	72	98	148	183	271	369	400	408	377	304	282	293	334	336	442
Men	%	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.5	98.7	99.0	99.3	98.6	96.4	98.2	96.8
Women		0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.3	1.0	0.7	1.4	3.6	1.8	3.2
American Indian		-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.4	0.0	0.0	0.5
Asian		-	-	-	-	-	-	-	-	25.2	18.3	32.0	37.4	33.3	43.5	36.2
Black		-	-	-	-	-	-	-	-	2.2	1.6	0.7	3.2	1.7	1.9	2.1
Hispanic		-	-	-	-	-	-	-	-	1.3	0.4	1.5	2.2	2.7	2.9	2.9
White		-	-	-	-	-	-	-	-	71.3	79.8	65.8	56.8	62.3	51.7	58.3
U.S. Citizens	%	76.4	72.4	82.4	81.4	78.6	76.7	79.0	68.1	58.6	59.9	52.8	48.5	44.9	37.2	38.2
Permanent Visas		6.9	11.2	5.4	5.5	5.2	8.7	9.5	17.6	17.5	14.5	15.6	16.7	14.4	8.3	11.1
Temporary Visas		12.5	16.3	11.5	12.0	10.3	13.6	11.3	13.2	21.0	25.0	30.1	32.4	36.8	49.1	42.8
OTHER ENGINEERING																
Total	N	226	252	407	570	857	1076	1421	1533	1380	1310	1181	1183	1154	1272	1364
Men	%	99.6	99.6	99.5	99.5	99.5	99.2	99.4	99.2	99.0	97.5	97.6	95.4	94.5	93.2	92.2
Women		0.4	0.4	0.5	0.5	0.5	0.8	0.6	0.8	1.0	2.5	2.4	4.6	5.5	6.8	7.8
American Indian		-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.2	0.3	0.0	0.2
Asian		-	-	-	-	-	-	-	-	20.7	22.8	26.8	30.7	32.5	36.9	38.5
Black		-	-	-	-	-	-	-	-	1.3	1.2	1.6	2.3	2.4	3.2	1.4
Hispanic		-	-	-	-	-	-	-	-	0.9	1.3	2.8	3.2	4.3	3.2	3.2
White		-	-	-	-	-	-	-	-	77.0	74.7	68.7	63.7	60.5	56.7	56.7
U.S. Citizens	%	79.6	81.3	78.9	77.2	75.8	72.9	74.2	67.8	58.6	57.9	55.0	52.5	46.1	44.7	42.4
Permanent Visas		8.8	4.8	4.2	6.1	5.6	11.1	11.2	16.6	15.3	12.6	12.6	11.3	10.6	9.0	9.4
Temporary Visas		10.6	13.9	16.7	15.8	15.4	14.4	13.7	14.5	21.3	27.3	29.6	33.1	37.1	42.7	39.7

APPENDIX TABLE C (Continued)

LIFE SCIENCES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
BIOCHEMISTRY																
Total	N	236	259	286	369	458	580	583	585	599	617	607	673	649	606	571
Men	%	88.1	85.7	84.6	82.4	81.2	78.4	83.4	82.1	75.1	77.1	75.9	72.1	74.4	68.5	66.0
Women		11.9	14.3	15.4	17.6	18.8	21.6	16.6	17.9	24.9	22.9	24.1	27.9	25.6	31.5	34.0
American Indian*	%	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.2	0.0	0.2	0.4
Asian		-	-	-	-	-	-	-	-	13.9	13.6	15.3	11.3	10.8	14.2	14.5
Black		-	-	-	-	-	-	-	-	1.5	0.9	1.6	1.6	1.5	1.2	1.5
Hispanic		-	-	-	-	-	-	-	-	0.6	1.6	2.6	1.5	1.0	1.0	3.2
White		-	-	-	-	-	-	-	-	84.1	84.0	80.5	85.4	86.8	83.4	80.4
U.S. Citizens	%	86.4	81.5	78.3	76.7	78.8	78.1	80.6	80.5	78.1	79.9	81.2	87.5	84.6	82.3	80.6
Permanent Visas		3.4	6.2	3.5	5.7	3.3	7.6	6.7	8.9	7.3	6.8	5.9	2.8	5.2	4.3	3.0
Temporary Visas		8.5	10.8	17.8	16.0	15.7	13.4	11.8	7.9	11.0	10.5	10.9	7.9	7.6	10.2	12.6
MICROBIOLOGY AND BACTERIOLOGY																
Total	N	203	184	199	194	288	361	399	397	382	362	349	365	324	356	337
Men	%	84.7	86.4	83.4	87.6	83.7	77.6	81.5	77.3	72.3	74.3	71.1	67.7	71.9	65.2	64.4
Women		15.3	13.6	16.6	12.4	16.3	22.4	18.5	22.7	27.7	25.7	28.9	32.3	28.1	34.8	35.6
American Indian		-	-	-	-	-	-	-	-	0.0	0.0	0.6	0.3	0.0	0.0	0.3
Asian		-	-	-	-	-	-	-	-	10.1	9.2	8.5	9.2	9.9	11.2	10.7
Black		-	-	-	-	-	-	-	-	3.6	0.9	4.7	3.6	3.6	2.4	4.1
Hispanic		-	-	-	-	-	-	-	-	1.5	1.2	2.2	2.1	3.3	1.5	4.4
White		-	-	-	-	-	-	-	-	84.9	88.7	83.9	84.9	83.1	85.0	80.6
U.S. Citizens	%	93.1	86.4	87.9	79.9	81.6	83.9	82.7	85.1	79.6	83.1	85.1	85.8	83.0	85.1	79.5
Permanent Visas		2.0	3.3	1.5	4.1	1.4	4.2	6.0	5.3	6.8	5.2	3.7	5.5	3.7	3.1	4.7
Temporary Visas		3.9	10.3	10.1	13.4	16.7	10.8	11.0	7.8	9.2	7.2	8.9	5.8	10.2	9.0	12.5
OTHER BIOSCIENCES																
Total	N	762	803	912	1139	1389	1886	2379	2618	2503	2594	2560	2765	2916	2913	2883
Men	%	87.4	89.9	88.6	88.6	86.8	85.7	85.5	82.9	80.7	78.1	74.8	73.0	69.7	69.2	66.6
Women		12.6	10.1	11.4	11.4	13.2	14.3	14.5	17.1	19.3	21.9	25.2	27.0	30.3	30.8	33.4
American Indian		-	-	-	-	-	-	-	-	0.0	0.1	0.2	0.1	0.3	0.3	0.6
Asian		-	-	-	-	-	-	-	-	8.7	7.0	8.2	7.5	7.7	8.3	9.4
Black		-	-	-	-	-	-	-	-	1.9	2.3	2.0	2.3	2.2	2.2	2.2
Hispanic		-	-	-	-	-	-	-	-	1.4	1.2	1.5	2.2	2.5	2.1	2.6
White		-	-	-	-	-	-	-	-	88.0	89.3	88.1	87.8	87.3	87.1	85.3
U.S. Citizens	%	85.4	84.4	83.0	80.9	81.3	82.0	84.2	83.5	79.0	85.0	86.0	86.0	85.7	85.2	82.9
Permanent Visas		1.6	2.2	1.3	2.7	3.5	3.9	4.5	5.7	5.5	3.9	3.6	4.1	2.4	2.6	2.8
Temporary Visas		10.8	12.6	14.3	14.5	13.9	12.9	10.4	8.7	10.5	8.6	7.6	8.0	9.0	9.2	9.6
AGRICULTURAL SCIENCES																
Total	N	339	414	470	517	576	684	918	1016	1002	950	1012	1072	1130	1155	1157
Men	%	98.2	98.3	98.5	98.5	98.6	99.0	97.5	96.8	95.4	94.3	93.1	89.8	84.9	86.0	83.8
Women		1.8	1.7	1.5	1.5	1.4	1.0	2.5	3.2	4.6	5.7	6.9	10.2	15.1	14.0	16.2
American Indian		-	-	-	-	-	-	-	-	0.0	0.1	0.2	0.1	0.3	0.1	0.0
Asian		-	-	-	-	-	-	-	-	17.0	14.4	18.0	13.8	14.2	14.9	17.1
Black		-	-	-	-	-	-	-	-	2.7	3.5	5.0	5.9	5.7	7.8	5.7
Hispanic		-	-	-	-	-	-	-	-	2.4	3.8	6.4	7.9	5.7	5.5	6.2
White		-	-	-	-	-	-	-	-	77.8	78.2	70.4	72.3	74.2	71.7	71.0
U.S. Citizens	%	77.3	73.9	72.3	70.2	65.1	64.0	68.8	62.6	57.0	62.3	61.3	62.1	65.6	60.4	56.8
Permanent Visas		2.9	3.9	3.8	3.3	2.6	6.0	5.6	9.2	7.3	4.6	4.5	3.9	2.8	3.8	4.7
Temporary Visas		17.7	22.0	23.8	26.1	30.4	28.7	25.3	27.7	33.2	31.9	32.5	32.6	29.5	33.3	32.8
HEALTH SCIENCES																
Total	N	82	69	108	142	174	196	414	467	476	503	512	586	686	719	772
Men	%	97.6	95.7	96.3	88.0	89.1	86.2	82.9	79.2	74.6	69.0	61.7	57.0	52.8	42.3	38.0
Women		2.4	4.3	3.7	12.0	10.9	13.8	17.1	20.8	25.4	31.0	38.3	43.0	47.2	57.7	62.0
American Indian		-	-	-	-	-	-	-	-	0.3	0.0	0.2	0.2	0.3	0.1	0.9
Asian		-	-	-	-	-	-	-	-	8.5	8.4	9.2	8.8	8.9	9.8	10.7
Black		-	-	-	-	-	-	-	-	3.3	4.8	3.6	3.8	4.8	5.1	5.0
Hispanic		-	-	-	-	-	-	-	-	0.3	1.1	3.6	3.6	2.8	2.5	2.9
White		-	-	-	-	-	-	-	-	87.7	85.7	83.3	83.6	83.2	82.4	80.6
U.S. Citizens	%	75.6	76.8	75.0	76.1	74.1	78.1	79.7	76.7	77.3	79.3	81.4	80.2	80.5	80.9	73.3
Permanent Visas		8.5	0.0	10.2	2.8	6.9	6.1	4.8	10.5	8.2	7.0	5.3	6.1	5.1	4.9	4.5
Temporary Visas		13.4	23.2	14.8	19.7	17.8	14.8	13.8	9.0	6.5	10.7	9.2	11.6	10.6	10.4	12.8

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* Respondents were first asked to identify their racial/ethnic status in 1973. See discussion on page 41 for description of past changes in the survey question on racial/ethnic group. The percentage is based on the total of doctorate recipients who reported racial/ethnic status.

APPENDIX TABLE C (Continued)

SOCIAL SCIENCES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
ECONOMICS AND ECONOMETRICS																
Total	N	332	352	418	527	627	747	853	894	853	885	801	767	761	794	861
Men	%	97.3	96.0	96.2	96.0	95.7	95.3	93.9	93.5	91.2	89.5	88.4	86.4	86.9	84.4	80.7
Women		2.7	4.0	3.8	4.0	4.3	4.7	6.1	6.5	8.8	10.5	11.6	13.6	13.1	15.6	19.3
American Indian	%	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.3	0.0	0.1	0.3
Asian		-	-	-	-	-	-	-	-	9.3	9.5	12.9	16.2	18.9	19.4	20.2
Black		-	-	-	-	-	-	-	-	2.5	2.8	1.9	4.2	4.5	5.0	3.4
Hispanic		-	-	-	-	-	-	-	-	1.3	0.4	4.8	5.2	4.7	5.4	5.0
White		-	-	-	-	-	-	-	-	86.6	87.2	80.2	74.0	71.9	70.0	71.1
U.S. Citizens	%	77.4	73.9	77.0	73.4	70.5	71.9	73.9	72.5	67.8	70.1	66.3	65.6	58.3	55.9	55.1
Permanent Visas		5.4	6.3	3.1	4.2	5.3	6.0	7.6	7.0	6.4	5.4	6.6	7.0	8.3	8.6	6.9
Temporary Visas		13.3	18.8	17.2	17.8	20.1	19.9	17.2	18.3	22.0	22.8	23.1	25.0	26.9	31.4	31.5
POLITICAL SCIENCE AND INTERNATIONAL RELATIONS																
Total	N	211	238	278	337	408	580	636	911	909	791	695	585	536	514	490
Men	%	93.8	91.2	93.2	89.3	91.4	88.6	90.3	89.7	86.4	84.1	81.6	80.7	78.2	78.6	73.1
Women		6.2	8.8	6.8	10.7	8.6	11.4	9.7	10.3	13.6	15.9	18.4	19.3	21.8	21.4	26.9
American Indian		-	-	-	-	-	-	-	-	0.0	0.1	0.0	0.4	0.2	0.0	0.0
Asian		-	-	-	-	-	-	-	-	4.7	5.8	5.0	7.5	10.6	12.5	12.7
Black		-	-	-	-	-	-	-	-	3.8	3.9	7.4	4.5	9.5	9.6	7.7
Hispanic		-	-	-	-	-	-	-	-	1.7	1.4	2.7	2.8	3.5	2.6	3.6
White		-	-	-	-	-	-	-	-	89.8	88.7	85.0	84.9	76.1	75.2	76.0
U.S. Citizens	%	84.8	81.9	75.2	79.8	78.2	81.4	83.0	81.6	79.1	81.0	82.0	80.3	73.5	68.9	64.5
Permanent Visas		2.8	2.5	2.9	3.9	5.1	6.7	5.3	6.3	5.4	3.7	5.5	5.0	5.0	6.6	6.1
Temporary Visas		11.4	12.2	19.1	11.3	13.0	7.9	9.3	9.0	10.8	13.5	10.2	11.6	15.5	17.7	19.0
CLINICAL, COUNSELING, AND SCHOOL PSYCHOLOGY																
Total	N	289	314	362	469	439	613	707	919	1061	1293	1464	1581	1681	1726	1708
Men	%	81.7	79.6	79.8	75.7	75.2	74.6	73.0	74.0	68.5	66.6	61.2	55.2	54.9	49.7	48.8
Women		18.3	20.4	20.2	24.3	24.8	25.4	27.0	26.0	31.5	33.4	38.8	44.8	45.1	50.3	51.2
American Indian		-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.2	0.6	0.2	0.4
Asian		-	-	-	-	-	-	-	-	0.6	0.6	0.5	1.7	0.9	1.2	1.9
Black		-	-	-	-	-	-	-	-	2.2	3.6	4.3	4.0	4.0	4.9	4.6
Hispanic		-	-	-	-	-	-	-	-	0.8	1.1	1.9	2.3	2.7	3.2	3.4
White		-	-	-	-	-	-	-	-	96.4	94.6	93.2	91.7	91.9	90.5	89.7
U.S. Citizens	%	95.2	95.5	93.6	94.7	95.4	96.7	97.0	97.4	94.9	97.3	92.0	94.9	94.8	94.1	92.4
Permanent Visas		2.8	1.9	2.5	2.8	2.1	1.6	1.6	1.0	1.4	1.0	1.2	0.9	1.1	1.4	1.8
Temporary Visas		1.4	1.9	3.6	2.1	2.1	1.5	1.0	1.3	2.2	1.3	1.3	0.9	1.2	0.8	1.3
OTHER PSYCHOLOGY																
Total	N	454	458	494	544	700	851	1183	1360	1537	1590	1591	1517	1477	1504	1363
Men	%	82.2	84.5	82.8	83.1	80.6	79.2	78.6	72.8	69.6	67.7	64.9	60.3	54.0	50.1	49.4
Women		17.8	15.5	17.2	16.9	19.4	20.8	21.4	27.2	30.4	32.3	35.1	39.7	46.0	49.9	50.6
American Indian		-	-	-	-	-	-	-	-	0.0	0.3	0.1	0.2	0.5	0.1	0.2
Asian		-	-	-	-	-	-	-	-	1.9	1.9	2.5	2.6	2.2	3.5	2.5
Black		-	-	-	-	-	-	-	-	2.4	2.8	3.2	4.5	4.2	3.2	2.9
Hispanic		-	-	-	-	-	-	-	-	0.7	1.1	2.0	1.9	2.6	3.2	2.9
White		-	-	-	-	-	-	-	-	95.0	94.0	92.3	90.8	90.6	89.9	90.8
U.S. Citizens	%	93.6	93.4	91.3	90.8	90.3	91.8	92.1	89.9	87.0	92.4	91.6	89.5	86.7	85.8	84.8
Permanent Visas		1.5	1.7	0.8	2.8	2.3	2.6	2.5	3.1	2.1	1.8	2.3	2.4	2.0	1.7	2.3
Temporary Visas		2.9	4.6	6.1	5.0	4.6	3.9	4.3	4.9	4.0	4.3	2.6	3.7	3.0	4.9	4.2
OTHER SOCIAL SCIENCES																
Total	N	282	306	338	381	445	704	1187	1384	1524	1655	1488	1406	1381	1365	1419
Men	%	82.3	85.3	86.1	87.1	84.0	83.0	84.9	80.9	75.0	71.7	65.5	63.2	63.6	58.9	56.5
Women		17.7	14.7	13.9	12.9	16.0	17.0	15.1	19.1	25.0	28.3	34.5	36.8	36.4	41.1	43.5
American Indian		-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.2	0.2	0.2	0.7
Asian		-	-	-	-	-	-	-	-	4.3	4.5	6.4	7.8	9.2	9.1	9.5
Black		-	-	-	-	-	-	-	-	3.4	4.7	5.5	5.6	6.4	6.6	6.3
Hispanic		-	-	-	-	-	-	-	-	0.8	1.4	3.4	2.8	3.0	3.4	5.0
White		-	-	-	-	-	-	-	-	91.5	89.4	84.6	83.5	81.2	80.6	78.4
U.S. Citizens	%	84.8	87.9	86.7	84.3	83.6	82.1	80.3	81.7	80.2	83.2	81.6	82.5	78.7	76.9	72.2
Permanent Visas		4.3	2.6	1.8	3.4	4.0	4.7	7.1	5.9	4.1	4.7	4.4	4.5	4.3	3.0	4.9
Temporary Visas		9.9	8.5	9.2	8.9	10.8	10.4	11.4	9.8	9.8	9.8	11.5	11.0	13.2	15.2	16.1

APPENDIX TABLE C (Continued)

HUMANITIES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
HISTORY																
Total	N	317	364	366	530	645	741	1091	1186	1186	1095	832	745	692	617	563
Men	%	88.3	91.5	88.3	89.6	87.8	86.8	86.7	84.6	81.5	78.7	77.5	74.0	71.0	66.5	67.3
Women		11.7	8.5	11.7	10.4	12.2	13.2	13.3	15.4	18.5	21.3	22.5	26.0	29.0	33.5	32.7
American Indian*	%	-	-	-	-	-	-	-	-	0.3	0.0	0.3	0.1	0.2	0.4	0.2
Asian		-	-	-	-	-	-	-	-	2.0	3.0	2.7	3.5	2.7	4.0	5.0
Black		-	-	-	-	-	-	-	-	3.2	3.4	4.8	4.1	5.3	5.3	4.0
Hispanic		-	-	-	-	-	-	-	-	0.9	1.3	2.9	2.2	2.0	2.1	2.3
White		-	-	-	-	-	-	-	-	93.6	92.3	89.3	90.1	89.8	88.3	88.5
U.S. Citizens	%	91.2	92.9	91.0	92.1	89.6	92.0	93.0	92.6	90.6	90.9	91.9	91.3	87.4	88.2	82.6
Permanent Visas		4.1	2.5	1.6	2.8	2.8	2.8	2.4	2.2	2.4	2.4	1.6	2.6	2.5	3.1	4.1
Temporary Visas		3.2	3.0	4.6	2.6	4.2	3.6	2.5	3.6	3.4	4.8	4.3	3.9	5.3	4.5	8.7
PHILOSOPHY																
Total	N	99	135	125	139	200	274	398	348	417	382	290	255	251	215	248
Men	%	94.9	83.0	88.8	91.4	89.0	90.1	86.9	88.2	84.4	84.0	82.4	76.9	76.5	78.1	79.8
Women		5.1	17.0	11.2	8.6	11.0	9.9	13.1	11.8	15.6	16.0	17.6	23.1	23.5	21.9	20.2
American Indian		-	-	-	-	-	-	-	-	0.0	0.3	0.4	0.0	0.0	0.5	0.0
Asian		-	-	-	-	-	-	-	-	4.1	3.4	1.9	3.0	3.8	4.7	3.1
Black		-	-	-	-	-	-	-	-	1.4	1.7	1.5	3.4	4.2	0.5	2.7
Hispanic		-	-	-	-	-	-	-	-	1.1	0.6	2.6	1.3	1.3	1.6	1.3
White		-	-	-	-	-	-	-	-	93.4	94.1	93.7	92.2	90.7	92.7	92.9
U.S. Citizens	%	92.9	92.6	83.2	87.1	86.0	92.7	89.9	89.4	85.6	87.2	90.7	85.1	85.7	82.3	82.7
Permanent Visas		4.0	3.0	3.2	2.2	3.5	3.6	2.0	2.0	2.6	4.5	2.8	3.5	3.2	3.7	3.2
Temporary Visas		2.0	2.2	9.6	4.3	6.5	1.8	5.0	4.9	8.2	6.5	3.8	7.8	6.4	7.0	8.1
ENGLISH AND AMERICAN LANGUAGE AND LITERATURE																
Total	N	333	386	463	528	671	930	1098	1370	1369	1214	1025	951	769	733	721
Men	%	84.4	78.5	79.7	79.5	76.9	72.5	69.4	65.2	62.7	58.2	53.1	51.5	47.3	44.3	41.6
Women		15.6	21.5	20.3	20.5	23.1	27.5	30.6	34.8	37.3	41.8	46.9	48.5	52.7	55.7	58.4
American Indian		-	-	-	-	-	-	-	-	0.1	0.0	0.1	0.1	0.3	0.0	0.3
Asian		-	-	-	-	-	-	-	-	1.1	0.6	1.1	2.7	2.4	3.2	5.2
Black		-	-	-	-	-	-	-	-	1.5	3.0	2.2	3.2	3.6	3.5	2.6
Hispanic		-	-	-	-	-	-	-	-	0.2	0.7	1.1	0.9	1.4	1.7	1.2
White		-	-	-	-	-	-	-	-	97.2	95.7	95.5	93.1	92.4	91.6	90.7
U.S. Citizens	%	95.2	94.6	94.4	93.0	91.5	92.9	92.9	94.2	90.1	95.1	92.7	91.0	90.6	88.4	84.2
Permanent Visas		1.5	3.4	2.2	1.3	2.7	2.0	2.9	1.9	2.3	1.0	2.3	1.5	2.3	2.6	2.8
Temporary Visas		2.4	2.1	2.8	3.4	3.1	3.4	2.8	2.3	2.9	2.5	2.2	3.8	3.5	4.9	6.7
FOREIGN LANGUAGES AND LITERATURE																
Total	N	157	168	196	271	380	526	647	812	887	835	637	535	490	492	445
Men	%	70.1	70.2	70.4	70.8	67.6	66.9	65.5	62.7	55.1	50.8	45.2	40.0	43.5	44.3	42.7
Women		29.9	29.8	29.6	29.2	32.4	33.1	34.5	37.3	44.9	49.2	54.8	60.0	56.5	55.7	57.3
American Indian		-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Asian		-	-	-	-	-	-	-	-	1.9	1.5	1.2	3.2	3.3	3.8	3.1
Black		-	-	-	-	-	-	-	-	2.0	1.7	2.7	2.2	3.7	2.0	2.3
Hispanic		-	-	-	-	-	-	-	-	6.1	6.4	13.2	14.3	20.6	16.2	18.2
White		-	-	-	-	-	-	-	-	90.0	90.5	82.9	80.3	72.4	77.7	76.4
U.S. Citizens	%	85.4	85.1	83.2	84.5	82.1	77.0	81.6	82.4	81.8	84.2	84.3	80.7	77.6	72.4	64.9
Permanent Visas		8.3	7.1	5.1	7.4	11.3	12.7	12.4	11.6	11.2	9.8	7.5	9.7	10.6	11.0	11.0
Temporary Visas		1.3	2.4	5.6	4.1	3.9	7.0	4.5	3.8	3.7	4.7	5.7	5.4	7.6	9.8	14.8
OTHER HUMANITIES																
Total	N	456	547	575	701	815	996	1084	1339	1311	1355	1427	1381	1356	1474	1484
Men	%	86.6	86.5	85.9	86.3	83.9	82.2	78.7	77.9	70.9	66.1	63.3	64.0	58.2	55.7	55.9
Women		13.4	13.5	14.1	13.7	16.1	17.8	21.3	22.1	29.1	33.9	36.7	36.0	41.8	44.3	44.1
American Indian		-	-	-	-	-	-	-	-	0.0	0.2	0.3	0.1	0.2	0.1	0.3
Asian		-	-	-	-	-	-	-	-	4.3	3.0	4.0	4.8	5.1	4.3	5.4
Black		-	-	-	-	-	-	-	-	2.5	2.6	2.3	4.1	3.3	4.7	3.8
Hispanic		-	-	-	-	-	-	-	-	0.8	1.0	1.7	1.7	2.1	2.2	2.1
White		-	-	-	-	-	-	-	-	92.4	93.2	91.7	89.3	89.2	88.7	88.4
U.S. Citizens	%	91.9	92.9	91.7	89.6	88.2	90.4	87.6	86.6	86.0	87.7	87.4	86.8	82.9	83.8	78.3
Permanent Visas		1.1	1.6	2.1	3.6	3.7	3.0	5.3	4.6	4.0	3.2	3.2	3.0	3.2	3.1	3.6
Temporary Visas		3.7	3.8	4.5	4.4	5.6	5.1	5.3	6.1	5.9	6.6	6.4	6.6	8.0	8.5	9.4

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* Respondents were first asked to identify their racial/ethnic status in 1973. See discussion on page 41 for description of past changes in the survey question on racial/ethnic group. The percentage is based on the total of doctorate recipients who reported racial/ethnic status.

APPENDIX TABLE C (Continued)

EDUCATION AND PROFESSIONAL FIELDS

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
EDUCATION, NONTEACHING FIELDS*																
Total	N	-	491	1218	1752	2318	2954	4103	4894	5242	5650	5171	5493	5252	4955	4814
Men	%	-	83.7	83.2	81.7	82.7	81.5	81.6	78.2	74.5	69.0	61.8	56.2	51.5	49.3	45.6
Women		-	16.3	16.8	18.3	17.3	18.5	18.4	21.8	25.5	31.0	38.2	43.8	48.5	50.7	54.4
American Indian*	%	-	-	-	-	-	-	-	-	0.2	0.3	0.4	0.7	0.4	0.5	0.5
Asian		-	-	-	-	-	-	-	-	2.2	2.2	3.0	3.1	3.5	3.7	3.6
Black		-	-	-	-	-	-	-	-	8.2	10.1	10.0	9.8	10.6	9.6	8.6
Hispanic		-	-	-	-	-	-	-	-	1.5	1.8	3.1	2.7	3.5	2.9	3.9
White		-	-	-	-	-	-	-	-	87.8	85.7	83.5	83.7	82.1	83.3	83.4
U.S. Citizens	%	-	96.3	94.8	94.2	95.3	93.9	95.7	94.2	93.4	93.9	92.3	91.7	90.0	89.3	88.1
Permanent Visas		-	0.6	0.9	0.5	0.9	1.3	1.0	1.8	1.3	1.3	1.8	1.4	1.9	1.6	2.0
Temporary Visas		-	2.9	4.0	4.9	3.5	4.2	2.9	3.4	3.7	4.1	5.2	5.6	6.6	7.0	6.0
TEACHING, SCIENCE FIELDS*																
Total	N	-	76	154	189	233	300	428	489	321	287	239	302	225	231	238
Men	%	-	84.2	77.9	79.4	80.3	83.7	89.7	85.1	80.7	76.7	73.6	59.6	61.8	60.2	56.7
Women		-	15.8	22.1	20.6	19.7	16.3	10.3	14.9	19.3	23.3	26.4	40.4	38.2	39.8	43.3
American Indian		-	-	-	-	-	-	-	-	0.4	0.0	0.0	0.0	0.5	0.9	0.0
Asian		-	-	-	-	-	-	-	-	1.4	4.9	4.9	5.1	8.3	11.9	7.5
Black		-	-	-	-	-	-	-	-	7.8	10.1	10.7	10.9	14.8	13.8	12.8
Hispanic		-	-	-	-	-	-	-	-	0.7	2.6	0.4	3.1	1.4	1.8	2.6
White		-	-	-	-	-	-	-	-	89.7	82.4	84.0	80.9	75.0	71.6	77.1
U.S. Citizens	%	-	90.8	93.5	87.3	94.0	91.7	95.6	90.6	88.8	86.4	87.0	84.8	77.8	71.9	75.6
Permanent Visas		-	0.0	0.6	1.1	0.9	1.0	0.5	1.2	2.2	2.1	0.8	2.0	3.1	2.2	5.0
Temporary Visas		-	9.2	4.5	11.6	3.9	6.3	3.3	7.0	5.0	10.1	11.7	12.9	16.9	22.9	18.5
TEACHING, OTHER FIELDS*																
Total	N	1491	982	521	410	489	775	1326	1702	1678	1788	1784	1792	1775	1610	1550
Men	%	79.1	78.9	77.0	78.3	73.0	73.5	70.7	70.4	67.8	59.6	54.2	52.3	48.8	46.5	44.1
Women		20.9	21.1	23.0	21.7	27.0	26.5	29.3	29.6	32.2	40.4	45.8	47.7	51.2	53.5	55.9
American Indian		-	-	-	-	-	-	-	-	0.1	0.4	0.6	0.4	0.6	0.4	0.3
Asian		-	-	-	-	-	-	-	-	2.6	2.1	2.8	4.2	5.7	5.7	5.3
Black		-	-	-	-	-	-	-	-	7.1	8.6	11.1	10.0	10.0	9.9	9.0
Hispanic		-	-	-	-	-	-	-	-	0.9	1.5	2.6	2.1	2.8	2.9	4.8
White		-	-	-	-	-	-	-	-	89.4	87.3	82.9	83.3	80.8	81.0	80.6
U.S. Citizens	%	94.6	93.6	93.9	93.4	91.6	88.6	91.0	90.8	82.2	87.3	85.0	81.4	77.5	81.7	75.7
Permanent Visas		0.8	0.5	0.8	1.2	1.4	1.5	2.0	2.3	1.7	1.9	2.0	1.7	2.3	2.8	4.0
Temporary Visas		3.6	5.2	5.0	2.9	3.1	5.2	5.3	4.9	5.6	4.8	6.4	8.9	10.5	8.8	8.8
BUSINESS AND MANAGEMENT																
Total	N	120	140	199	246	372	440	584	765	796	739	713	640	685	869	901
Men	%	94.2	97.9	98.0	98.4	96.2	97.3	97.8	97.8	95.4	95.4	92.1	85.6	83.5	79.3	77.0
Women		5.8	2.1	2.0	1.6	3.8	2.7	2.2	2.2	4.6	4.6	7.9	14.4	16.5	20.7	23.0
American Indian		-	-	-	-	-	-	-	-	0.1	0.3	0.0	0.0	0.2	0.3	0.4
Asian		-	-	-	-	-	-	-	-	4.8	4.2	8.3	8.8	11.6	17.3	22.6
Black		-	-	-	-	-	-	-	-	1.0	3.1	4.3	4.1	3.3	3.0	3.6
Hispanic		-	-	-	-	-	-	-	-	0.6	0.9	2.2	2.0	1.6	1.9	1.9
White		-	-	-	-	-	-	-	-	93.5	91.5	85.1	85.1	83.4	77.6	71.6
U.S. Citizens	%	91.7	92.1	88.9	87.4	84.1	80.7	81.0	81.3	76.5	77.1	75.0	74.8	69.8	66.6	61.4
Permanent Visas		1.7	0.7	1.0	2.8	4.0	7.7	5.5	5.4	5.0	6.0	5.0	6.7	6.4	7.5	7.2
Temporary Visas		6.7	5.7	9.0	7.7	7.0	9.8	10.6	9.2	12.8	15.0	18.2	15.0	16.9	21.5	22.8
OTHER PROFESSIONAL FIELDS																
Total	N	90	95	110	142	170	252	304	436	785	971	1028	994	1099	1049	1035
Men	%	68.9	66.3	59.1	62.0	56.5	69.4	67.4	71.1	76.7	68.9	71.2	65.7	60.6	59.6	56.3
Women		31.1	33.7	40.9	38.0	43.5	30.6	32.6	28.9	23.3	31.1	28.8	34.3	39.4	40.4	43.7
American Indian		-	-	-	-	-	-	-	-	0.1	0.4	0.2	0.1	0.1	0.2	0.6
Asian		-	-	-	-	-	-	-	-	2.7	3.7	5.1	5.0	6.0	6.2	7.8
Black		-	-	-	-	-	-	-	-	4.3	5.2	8.3	8.1	7.6	8.3	6.3
Hispanic		-	-	-	-	-	-	-	-	0.7	2.8	3.6	1.8	2.4	3.0	2.5
White		-	-	-	-	-	-	-	-	92.2	87.9	82.7	85.0	83.8	82.2	82.8
U.S. Citizens	%	83.3	81.1	71.8	72.5	76.5	72.6	72.7	81.9	83.9	86.2	83.4	85.1	80.7	80.3	79.2
Permanent Visas		3.3	1.1	4.5	3.5	3.5	5.2	4.9	5.3	4.3	2.3	3.2	2.4	2.0	2.5	2.6
Temporary Visas		10.0	15.8	21.8	20.4	15.9	15.1	16.8	9.9	6.4	8.3	10.6	9.6	12.4	12.7	9.4

* Education was differentiated in 1960. Data prior to 1960 appear under "Teaching, Other Fields."

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

APPENDIX D: Trends in Postgraduation Plans

Appendix Table D is divided into six broad field sections, which appear on separate pages; each broad field section is further subdivided into five cluster fields, or subfields. The sections are as follows:

A. Physical Sciences
   1. Physics and Astronomy
   2. Chemistry
   3. Earth, Atmospheric, and Marine Sciences
   4. Mathematics
   5. Computer Sciences

B. Engineering
   1. Electrical/Electronics
   2. Chemical
   3. Civil
   4. Mechanical
   5. Other

C. Life Sciences
   1. Biochemistry
   2. Microbiology and Bacteriology
   3. Other Biosciences
   4. Agricultural Sciences
   5. Health Sciences

D. Social Sciences
   1. Economics and Econometrics
   2. Political Science and International Relations
   3. Clinical/Counseling/School Psychology
   4. Other Psychology
   5. Other Social Sciences

E. Humanities
   1. History
   2. Philosophy
   3. English and American Language and Literature
   4. Foreign Languages and Literature
   5. Other Humanities

F. Education and Professional Fields
   1. Education, Nonteaching Fields
   2. Teaching, Science Fields
   3. Teaching, Other Fields
   4. Business and Management
   6. Other Professional Fields

This table highlights the postgraduation plans of doctorate recipients in 30 selected fields in the period 1958-1986, during which the Survey of Earned Doctorates has been conducted.

Line 1 of each cluster displays the number of doctorate recipients earned in that year.

Line 2 shows the percentage of recipients who reported that they planned employment after graduation.

Lines 3-6 break out the percentage of those planning employment (line 2) by employment sector. Employment sectors encompass the following:

- "Academe" includes 4-year colleges and universities, junior colleges, medical schools, and foreign universities.
- "Government" includes federal, state, local, and foreign governments.
- "Business" includes self-employment as well as business or industry.
- "Other" includes non-profit organizations and elementary/secondary schools and any other type of employer not listed on the questionnaire.

Lines 7 and 8 break out the percentage of Ph.D.s who have definite employment from those who are seeking employment; together they equal line 2:

- "Definite" describes the status of those recipients who were returning to or continuing in predoctoral employment or who signed a contract or made a definite commitment (see questionnaire item 19).
- "Seeking" describes the status of recipients who were either negotiating with one or more organizations, were seeking a position, or "other" (see questionnaire item 19).

Line 9 displays the percentage of recipients who reported that they planned postgraduate study. Lines 2 and 9 together total the percentage of recipients reporting plans, which ranges by field between 85 and 100 percent.

Lines 10-12 break out the percentage of those planning study (line 9) by type of study appointment. Types of appointment include postdoctoral fellowship, postdoctoral research associateship, traineeship, and other study.

APPENDIX TABLE D Trends in Postgraduation Plans of Doctorate Recipients in 30 Selected Fields, 1958-1986

PHYSICAL SCIENCES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
PHYSICS AND ASTRONOMY	N	497	530	710	866	1061	1436	1655	1634	1339	1237	1067	983	1014	1080	1187
Employment Plans	%	82.9	86.6	78.2	75.9	70.1	74.3	56.5	49.4	45.5	41.9	43.8	44.6	46.8	43.4	37.8
by Sector																
Academe		37.0	38.7	37.2	37.2	36.0	33.6	23.9	22.5	15.7	16.2	13.0	11.7	12.0	11.9	10.4
Government		11.7	10.6	12.1	8.8	9.1	13.6	9.2	12.3	11.5	8.2	8.2	8.2	8.1	8.3	6.3
Industry		28.6	29.1	15.5	17.6	14.9	14.8	16.5	8.9	13.3	12.7	19.2	21.8	24.6	20.6	18.5
Other		5.6	8.3	13.4	12.4	10.1	12.3	6.9	5.7	5.0	4.8	3.3	2.8	2.2	2.7	2.6
by Status																
Definite		69.6	71.1	60.1	58.2	53.7	57.5	41.9	35.6	30.4	26.8	31.6	34.1	35.1	29.9	28.1
Seeking		13.3	15.5	18.0	17.7	16.4	16.9	14.6	13.8	15.1	15.1	12.2	10.5	11.7	13.5	9.7
Study Plans		8.9	10.9	17.5	18.0	23.8	20.7	37.6	41.6	45.1	48.4	49.3	48.4	46.0	50.1	51.7
by Type*																
Fellowship		8.9	10.9	17.5	18.0	23.8	19.6	11.6	12.8	16.6	17.3	16.2	15.3	14.9	15.1	15.2
Research Associate		-	-	-	-	-	-	25.6	26.6	26.5	29.5	31.5	31.5	30.0	34.2	35.5
Traineeship/Other		-	-	-	-	-	1.1	0.4	2.1	2.0	1.6	1.6	1.6	1.1	0.9	1.1
by Status																
Definite		8.9	10.9	17.5	17.9	23.5	19.8	29.4	32.6	32.5	35.1	38.3	38.7	33.4	38.3	38.5
Seeking**		-	-	-	0.1	0.3	0.9	8.2	9.0	12.6	13.3	11.0	9.8	12.5	11.8	13.2
CHEMISTRY	N	965	1078	1138	1351	1594	1803	2238	2019	1797	1624	1544	1538	1680	1765	1903
Employment Plans	%	83.7	81.4	72.5	68.2	67.4	67.3	59.8	42.9	46.4	43.5	47.5	54.1	55.4	47.1	44.7
by Sector																
Academe		21.2	18.6	16.3	16.3	16.8	19.0	18.5	17.1	12.5	11.9	10.2	8.3	7.9	8.0	7.3
Government		4.8	7.0	7.4	6.3	5.1	5.0	4.6	7.2	5.2	4.1	3.4	3.8	2.7	3.5	2.0
Industry		53.3	50.1	38.4	35.3	34.3	35.7	33.0	13.7	25.3	24.7	31.6	39.7	43.1	34.0	33.4
Other		4.5	5.8	10.4	10.3	11.3	7.6	3.7	5.0	3.5	2.8	2.3	2.3	1.7	1.6	2.0
by Status																
Definite		74.4	72.7	64.8	58.8	60.3	58.9	47.8	30.7	36.2	33.5	37.2	44.5	47.0	36.3	34.9
Seeking		9.3	8.7	7.7	9.4	7.2	8.4	12.0	12.3	10.2	10.0	10.3	9.6	8.4	10.8	9.8
Study Plans		9.6	16.4	25.5	28.1	28.3	29.5	37.0	50.7	46.1	51.8	46.4	41.7	39.0	47.0	47.2
by Type																
Fellowship		9.6	16.4	25.5	28.1	28.3	28.0	20.3	24.8	22.5	24.9	19.4	17.9	16.8	19.5	21.8
Research Associate		-	-	-	-	-	-	15.7	22.5	21.5	24.8	24.7	22.1	20.9	25.9	23.8
Traineeship/Other		-	-	-	-	-	1.4	0.9	3.3	2.0	2.0	2.3	1.6	1.3	1.5	1.7
by Status																
Definite		9.6	16.4	25.5	28.1	28.2	29.0	30.9	40.5	34.3	40.6	36.0	32.1	31.1	35.2	36.7
Seeking		-	-	-	0.1	0.1	0.4	6.0	10.2	11.8	11.2	10.4	9.6	7.9	11.8	10.5
EARTH/ATMOSPHERIC/MARINE	N	190	253	249	310	404	442	510	604	629	645	623	628	657	614	589
Employment Plans	%	93.2	92.1	88.4	86.1	82.7	85.1	73.7	74.3	71.4	68.2	64.8	65.4	69.1	62.2	55.5
by Sector																
Academe		36.3	41.5	30.5	35.2	32.4	38.2	39.0	39.1	30.4	27.8	23.1	23.2	21.9	25.6	23.1
Government		28.9	22.9	27.3	22.6	20.8	19.5	13.3	15.6	17.3	17.8	17.3	15.4	11.3	12.1	11.7
Industry		21.1	20.6	19.7	19.4	19.3	20.1	18.2	15.6	16.9	18.4	18.9	23.1	32.7	20.4	17.1
Other		6.8	7.1	10.8	9.0	10.1	7.2	3.1	4.1	6.8	4.2	5.5	3.7	3.2	4.2	3.6
by Status																
Definite		80.0	77.9	75.1	73.2	69.1	72.4	62.0	59.4	55.8	52.6	49.9	53.3	54.9	47.6	38.9
Seeking		13.2	14.2	13.3	12.9	13.6	12.7	11.8	14.9	15.6	15.7	14.9	12.1	14.2	14.7	16.6
Study Plans		3.2	5.1	8.4	6.5	13.4	10.2	22.5	20.5	19.4	26.2	30.2	29.8	26.0	34.4	36.0
by Type																
Fellowship		3.2	5.1	8.4	6.5	13.4	9.0	8.4	8.8	7.9	10.1	12.2	11.5	8.1	11.7	14.6
Research Associate		-	-	-	-	-	-	13.7	11.1	10.7	15.8	17.3	17.5	17.4	22.3	20.4
Traineeship/Other		-	-	-	-	-	1.1	0.4	0.7	0.8	0.3	0.6	0.8	0.7	0.3	1.0
by Status																
Definite		3.2	5.1	8.4	6.5	13.4	9.3	17.3	15.1	13.4	18.9	20.7	23.9	19.2	22.6	24.8
Seeking		-	-	-	-	-	0.9	5.3	5.5	6.0	7.3	9.5	5.9	6.8	11.7	11.2
MATHEMATICS	N	238	291	388	588	769	971	1225	1281	1211	1003	838	744	720	698	730
Employment Plans	%	86.1	90.0	83.5	89.6	88.7	90.9	87.3	84.8	83.0	84.0	81.6	79.7	78.2	77.4	66.8
by Sector																
Academe		55.9	57.7	54.6	61.2	64.4	65.0	68.9	66.0	60.3	64.8	59.2	55.4	54.7	58.0	48.4
Government		7.6	14.8	10.3	10.0	9.4	7.6	3.8	6.2	5.2	7.1	5.1	5.1	6.5	4.9	2.7
Industry		15.1	14.1	11.6	10.0	9.2	10.3	10.7	7.8	10.7	9.2	13.8	15.7	14.2	12.0	13.0
Other		7.6	3.4	7.0	8.3	5.7	8.0	3.8	4.8	6.8	3.0	3.5	3.5	2.8	2.4	2.7
by Status																
Definite		71.0	79.0	69.1	73.8	72.6	73.2	68.7	63.4	55.2	60.3	59.7	62.9	58.9	58.3	51.0
Seeking		15.1	11.0	14.4	15.8	16.1	17.7	18.5	21.4	27.7	23.7	22.0	16.8	19.3	19.1	15.9
Study Plans		7.1	7.6	12.1	7.0	6.2	4.8	7.9	9.8	9.0	10.4	12.2	13.6	15.6	16.3	23.7
by Type																
Fellowship		7.1	7.6	12.1	7.0	6.2	4.1	5.0	5.1	3.6	4.0	5.1	6.6	8.1	6.9	9.6
Research Associate		-	-	-	-	-	-	2.4	3.3	3.7	4.7	4.4	5.1	5.8	6.4	11.8
Traineeship/Other		-	-	-	-	-	0.7	0.4	1.5	1.7	1.7	2.7	1.8	1.7	3.0	3.3
by Status																
Definite		7.1	7.6	12.1	7.0	6.2	4.7	5.9	6.5	4.7	6.0	8.9	9.4	11.1	11.0	15.8
Seeking		-	-	-	-	-	0.1	2.0	3.4	4.3	4.4	3.2	4.2	4.4	5.3	7.9
COMPUTER SCIENCES***	N	-	-	-	-	-	-	-	-	-	-	121	218	220	295	399
Employment Plans	%	-	-	-	-	-	-	-	-	-	-	82.6	85.3	85.5	87.8	79.2
by Sector		-	-	-	-	-	-	-	-	-	-	47.9	39.9	35.5	43.4	40.6
Government		-	-	-	-	-	-	-	-	-	-	5.8	5.5	7.3	3.1	4.0
Industry		-	-	-	-	-	-	-	-	-	-	26.4	37.2	40.0	36.9	31.6
Other		-	-	-	-	-	-	-	-	-	-	2.5	2.8	2.7	4.4	3.0
by Status																
Definite		-	-	-	-	-	-	-	-	-	-	64.5	67.4	67.7	69.8	59.1
Seeking		-	-	-	-	-	-	-	-	-	-	18.2	17.9	17.7	18.0	20.1
Study Plans		-	-	-	-	-	-	-	-	-	-	9.9	9.6	11.4	8.1	11.3
by Type																
Fellowship		-	-	-	-	-	-	-	-	-	-	4.1	3.7	4.5	1.7	2.8
Research Associate		-	-	-	-	-	-	-	-	-	-	4.1	5.5	6.4	5.8	7.0
Traineeship/Other		-	-	-	-	-	-	-	-	-	-	1.6	0.5	0.5	0.6	1.5
by Status																
Definite		-	-	-	-	-	-	-	-	-	-	7.4	6.0	6.8	5.8	7.5
Seeking		-	-	-	-	-	-	-	-	-	-	2.5	3.7	4.5	2.4	3.8

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* Research Associate was included as a category in 1969. Traineeship and Other were included as categories in 1967.

** Seeking Postdoctoral Study Appointment was included as a category in 1969.

*** Computer Sciences was added to the Specialties List in 1977.

APPENDIX TABLE D (Continued)

ENGINEERING

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
ELECTRICAL, ELECTRONICS	N	146	201	296	442	569	741	857	815	678	592	463	478	544	593	707
Employment Plans	%	94.5	96.5	94.6	92.3	89.6	93.7	90.2	82.5	79.2	78.7	76.7	79.7	81.4	78.4	74.4
by Sector																
Academe		39.7	49.3	44.3	35.7	29.3	25.1	26.1	22.5	17.0	22.6	18.6	18.2	20.0	23.4	25.7
Government		7.5	7.5	5.7	7.0	9.7	11.3	9.1	12.5	11.1	11.1	8.9	11.7	11.4	6.1	5.7
Industry		39.7	34.8	34.5	36.7	37.1	43.5	48.3	41.2	43.7	41.6	45.4	47.3	46.7	45.9	40.2
Other		7.5	5.0	10.1	12.9	13.5	13.8	6.7	6.3	7.5	3.4	3.9	2.5	3.3	3.0	2.8
by Status																
Definite		71.9	80.1	76.0	70.6	72.4	71.4	65.8	58.5	58.4	55.2	58.7	65.7	61.9	58.0	55.6
Seeking		22.6	16.4	18.6	21.7	17.2	22.3	24.4	23.9	20.8	23.5	17.9	14.0	19.5	20.4	18.8
Study Plans		1.4	2.5	3.0	4.8	4.7	4.0	7.2	12.5	10.3	15.2	12.5	12.8	11.4	11.1	12.2
by Type*																
Fellowship		1.4	2.5	3.0	4.8	4.7	3.5	2.7	3.3	2.4	3.4	3.7	2.5	2.9	3.4	2.1
Research Associate		-	-	-	-	-	-	3.9	7.7	7.2	10.8	7.8	8.2	5.9	6.1	7.9
Traineeship/Other		-	-	-	-	-	0.5	0.7	1.4	0.7	1.0	1.1	2.1	2.6	1.7	2.1
by Status																
Definite		1.4	2.5	3.0	4.5	4.7	3.6	4.1	7.5	6.0	10.1	7.8	8.6	6.8	5.6	7.1
Seeking**		-	-	-	0.2	-	0.4	3.2	5.0	4.3	5.1	4.8	4.2	4.6	5.6	5.1
CHEMICAL ENGINEERING	N	133	181	240	276	367	368	445	385	388	314	261	285	306	361	476
Employment Plans	%	92.5	92.8	94.2	89.1	88.8	91.0	91.5	78.2	82.0	79.3	80.5	82.8	82.7	69.5	64.1
by Sector																
Academe		12.8	19.3	13.8	18.5	15.0	11.1	18.2	15.1	11.9	15.6	17.2	20.0	18.0	18.6	13.7
Government		4.5	6.1	9.2	6.9	5.2	6.3	4.3	7.8	5.2	5.4	6.1	3.5	4.9	3.0	3.6
Industry		68.4	61.3	62.5	53.6	60.2	66.6	64.9	50.1	60.8	55.4	54.4	56.1	58.8	44.3	43.3
Other		6.8	6.1	8.8	10.1	8.4	7.1	4.0	5.2	4.1	2.9	2.7	3.2	1.0	3.6	3.6
by Status																
Definite		85.0	81.2	82.1	79.0	84.2	82.1	71.7	55.8	61.9	64.6	67.4	67.7	66.0	51.2	49.8
Seeking		7.5	11.6	12.1	10.1	4.6	9.0	19.8	22.3	20.1	14.6	13.0	15.1	16.7	18.3	14.3
Study Plans		2.3	3.9	4.6	8.0	6.5	7.1	6.7	16.1	10.8	13.7	15.3	12.3	9.5	21.1	25.8
by Type																
Fellowship		2.3	3.9	4.6	8.0	6.5	6.5	3.1	8.1	2.8	6.4	8.0	4.2	2.3	5.8	9.5
Research Associate		-	-	-	-	-	-	2.7	6.8	6.7	6.7	5.7	6.0	4.9	13.3	13.4
Traineeship/Other		-	-	-	-	-	0.5	0.8	1.3	1.3	0.6	1.5	2.1	2.3	2.0	2.9
by Status																
Definite		2.3	3.9	4.6	8.0	6.5	6.8	5.4	10.1	6.4	11.1	11.9	8.4	6.2	12.7	16.6
Seeking		-	-	-	-	-	0.3	1.3	6.0	4.4	2.5	3.4	3.9	3.3	8.3	9.2
CIVIL ENGINEERING	N	52	62	125	193	237	301	311	362	324	314	236	240	308	351	387
Employment Plans	%	92.3	95.2	92.8	87.0	91.1	93.7	88.7	83.4	77.2	82.2	78.4	83.3	84.4	76.1	73.9
by Sector																
Academe		65.4	62.9	51.2	43.0	47.3	44.9	45.0	35.1	27.8	32.8	30.1	41.3	32.5	39.0	34.4
Government		13.5	17.7	24.0	18.1	19.8	15.6	11.9	16.0	12.3	10.2	14.4	12.1	11.0	7.7	7.8
Industry		9.6	8.1	8.0	11.4	13.1	19.3	27.0	27.1	33.3	34.4	30.9	27.1	37.3	27.4	27.4
Other		3.8	6.5	9.6	14.5	11.0	14.0	4.8	5.2	3.7	4.8	3.0	2.9	3.6	2.0	4.4
by Status																
Definite		84.6	77.4	75.2	74.6	75.9	76.4	65.3	60.8	57.4	53.8	56.8	65.0	59.1	51.6	50.6
Seeking		7.7	17.7	17.6	12.4	15.2	17.3	23.5	22.7	19.8	28.3	21.6	18.3	25.3	24.5	23.3
Study Plans		5.8	1.6	4.8	5.7	4.2	1.0	8.7	12.4	9.9	11.1	14.8	10.8	9.7	12.8	14.5
by Type																
Fellowship		5.8	1.6	4.8	5.7	4.2	1.0	3.2	3.6	2.5	1.9	3.0	1.3	1.0	3.1	4.1
Research Associate		-	-	-	-	-	-	5.5	7.2	5.9	6.7	10.2	8.8	7.1	8.0	9.0
Traineeship/Other		-	-	-	-	-	0.0	0.0	1.7	1.5	2.5	1.6	0.8	1.6	1.7	1.3
by Status																
Definite		5.8	1.6	4.8	5.7	4.2	1.0	4.8	7.7	4.6	6.7	5.9	7.5	4.9	4.6	7.2
Seeking		-	-	-	-	-	0.0	3.9	4.7	5.2	4.5	8.9	3.3	4.9	8.3	7.2
MECHANICAL ENGINEERING	N	72	98	148	183	271	369	400	408	377	304	282	293	334	336	442
Employment Plans	%	93.1	96.9	96.6	95.1	89.3	93.8	93.0	83.1	81.2	84.5	75.5	79.9	76.6	70.2	71.3
by Sector																
Academe		43.1	45.9	34.5	38.8	35.8	31.7	33.3	28.4	22.0	28.0	23.4	22.5	23.7	31.8	29.0
Government		8.3	8.2	8.8	7.1	8.9	11.1	10.8	16.2	10.6	14.8	9.9	13.0	9.6	7.4	8.4
Industry		34.7	40.8	43.2	32.8	33.9	42.5	44.8	34.8	42.7	38.2	37.2	43.0	40.1	29.2	30.5
Other		6.9	2.0	10.1	16.4	10.7	8.4	4.3	3.7	5.8	3.6	5.0	1.4	3.3	1.8	3.4
by Status																
Definite		76.4	79.6	76.4	79.2	79.3	78.0	70.0	62.3	58.1	57.9	54.3	63.5	59.0	47.6	46.6
Seeking		16.7	17.3	20.3	15.8	10.0	15.7	23.0	20.8	23.1	26.6	21.3	16.4	17.7	22.6	24.7
Study Plans		0.0	2.0	1.4	3.8	3.7	3.8	4.3	12.0	11.7	12.2	16.7	13.3	15.9	17.3	18.1
by Type																
Fellowship		0.0	2.0	1.4	3.8	3.7	3.8	1.8	3.9	4.2	2.6	3.5	2.0	2.4	3.3	4.1
Research Associate		-	-	-	-	-	-	2.3	7.8	7.4	8.9	12.1	9.9	10.5	12.2	12.2
Traineeship/Other		-	-	-	-	-	0.0	0.3	0.2	0.0	0.6	1.1	1.4	3.0	1.8	1.8
by Status																
Definite		0.0	2.0	1.4	3.8	3.7	3.5	3.3	9.1	5.8	4.9	10.6	8.9	9.3	9.8	10.6
Seeking		-	-	-	-	-	0.3	1.0	2.9	5.8	7.2	6.0	4.4	6.6	7.4	7.5
OTHER ENGINEERING	N	226	252	407	570	857	1076	1421	1533	1380	1310	1181	1183	1154	1272	1364
Employment Plans	%	94.2	94.0	93.4	90.5	88.7	91.5	86.9	79.5	77.8	76.7	76.0	78.8	77.5	74.1	66.6
by Sector																
Academe		38.9	35.7	33.4	32.5	32.3	27.8	27.2	24.6	20.8	25.9	21.9	22.3	21.4	26.5	24.5
Government		11.9	10.7	9.1	9.1	10.9	15.4	13.6	17.4	15.4	13.1	13.5	13.9	9.9	11.8	7.7
Industry		38.5	39.7	37.6	35.6	32.8	33.1	38.4	30.1	36.3	31.9	36.8	38.9	40.9	32.6	30.6
Other		4.9	7.9	13.3	13.3	12.7	15.2	7.7	7.4	5.3	5.8	3.7	3.7	5.3	3.1	3.8
by Status																
Definite		77.4	77.8	76.9	73.7	75.7	74.8	66.5	59.2	58.6	56.1	58.3	63.7	55.8	53.5	46.4
Seeking		16.8	16.3	16.5	16.8	13.0	16.7	20.4	20.3	19.1	20.6	17.6	15.1	21.7	20.6	20.2
Study Plans		2.7	5.2	5.4	6.1	6.3	5.8	9.9	14.5	13.2	17.8	18.2	14.7	14.6	18.4	22.3
by Type																
Fellowship		2.7	5.2	5.4	6.1	6.3	5.6	3.9	5.8	5.3	6.0	6.2	3.9	4.2	4.6	4.3
Research Associate		-	-	-	-	-	-	5.3	7.6	6.8	10.2	10.0	8.7	9.1	12.0	15.6
Traineeship/Other		-	-	-	-	-	0.2	0.7	1.2	1.1	1.7	2.0	2.1	1.4	1.7	2.4
by Status																
Definite		2.7	5.2	5.4	6.1	6.2	5.6	6.5	8.8	7.8	12.1	12.2	9.8	8.6	11.3	13.6
Seeking		-	-	-	-	0.1	0.2	3.4	5.7	5.4	5.7	6.0	4.9	6.1	7.1	8.7

84

APPENDIX TABLE D (Continued)

LIFE SCIENCES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
BIOCHEMISTRY	N	236	259	286	369	458	580	583	585	599	617	607	673	649	606	571
Employment Plans	%	74.6	69.5	51.4	45.8	43.2	40.3	27.1	21.5	22.2	15.2	14.7	15.8	18.0	15.5	15.1
by Sector																
Academe		33.5	35.1	17.5	21.7	16.4	15.7	12.2	8.9	10.5	5.3	6.3	5.5	5.5	4.1	5.6
Government		11.9	11.6	12.2	8.7	8.7	7.6	5.0	3.9	3.2	2.3	1.8	1.5	1.5	1.5	1.6
Industry		14.4	10.8	11.5	4.9	7.2	6.0	6.2	3.1	5.2	4.2	4.9	7.1	9.4	8.1	6.8
Other		14.8	12.0	10.1	10.6	10.9	11.0	3.8	5.6	3.3	3.4	1.6	1.6	1.5	1.8	1.1
by Status																
Definite		63.1	55.2	39.2	36.3	34.1	28.8	20.9	14.9	15.0	9.2	10.7	10.8	13.3	11.1	9.8
Seeking		11.4	14.3	12.2	9.5	9.2	11.6	6.2	6.7	7.2	6.0	4.0	4.9	4.8	4.5	5.3
Study Plans		15.7	28.6	47.6	49.9	52.4	56.6	70.2	69.7	71.5	78.4	81.1	80.5	78.7	78.7	78.5
by Type*																
Fellowship		15.7	28.6	47.6	49.9	52.4	49.3	49.1	42.2	35.1	48.0	50.6	50.7	45.6	46.7	46.8
Research Associate		-	-	-	-	-	-	15.6	18.5	26.7	21.6	23.4	21.5	22.3	21.3	25.6
Traineeship/Other		-	-	-	-	-	7.2	5.5	9.1	9.7	9.0	7.1	8.3	10.8	10.7	6.2
by Status																
Definite		15.7	28.6	47.6	49.6	52.0	54.7	63.0	61.0	58.1	67.3	67.5	67.2	63.5	62.2	68.0
Seeking**		-	-	-	0.3	0.4	1.9	7.2	8.7	13.4	11.2	13.5	13.4	15.3	16.5	10.5
MICROBIOLOGY/BACTERIOLOG	N	203	184	199	194	288	361	399	397	382	362	349	365	324	356	337
Employment Plans	%	86.2	78.3	69.8	72.2	59.4	57.3	43.6	40.1	38.7	30.7	24.1	27.1	27.2	22.2	20.8
by Sector																
Academe		40.4	35.3	24.1	29.9	24.0	27.1	24.3	21.2	20.2	13.5	10.0	7.7	11.4	7.0	4.7
Government		12.3	19.6	18.1	14.4	13.9	11.4	6.0	6.8	8.9	7.2	4.3	6.3	4.6	4.5	4.5
Industry		16.7	10.9	12.6	11.3	8.7	5.3	8.5	5.3	6.5	5.8	7.2	9.9	8.0	7.9	10.4
Other		16.7	12.5	15.1	16.5	12.8	13.6	4.8	6.8	3.1	4.1	2.6	3.3	3.1	2.8	1.2
by Status																
Definite		70.4	62.0	52.3	56.7	47.9	42.4	34.1	27.2	28.0	24.0	15.8	21.6	21.0	16.9	14.2
Seeking		15.8	16.3	17.6	15.5	11.5	15.0	9.5	12.8	10.7	6.6	8.3	5.5	6.2	5.3	6.5
Study Plans		9.9	20.7	28.1	24.7	38.9	40.4	53.4	54.2	52.4	64.4	70.5	68.5	66.7	72.5	75.1
by Type																
Fellowship		9.9	20.7	28.1	24.7	38.9	32.7	38.6	33.5	31.9	39.8	43.6	39.7	42.9	43.5	43.3
Research Associate		-	-	-	-	-	-	12.8	15.6	15.7	18.2	21.5	20.5	13.6	25.0	27.6
Traineeship/Other		-	-	-	-	-	7.8	2.1	5.0	4.7	6.3	5.5	8.2	10.2	3.9	4.2
by Status																
Definite		9.9	20.7	28.1	24.7	37.5	39.1	44.9	42.6	41.9	54.4	57.9	56.2	55.6	54.8	63.2
Seeking		-	-	-	-	1.4	1.4	8.5	11.6	10.5	9.9	12.6	12.3	11.1	17.7	11.9
OTHER BIOSCIENCES	N	762	803	912	1139	1389	1886	2379	2618	2503	2594	2560	2765	2916	2913	2883
Employment Plans	%	81.2	80.9	73.8	70.8	70.1	66.9	55.9	52.3	49.3	42.8	37.0	34.8	32.3	30.6	28.7
by Sector																
Academe		50.7	49.9	42.5	42.1	42.5	39.3	40.3	35.3	31.9	27.6	24.3	20.3	17.0	15.7	14.2
Government		17.5	17.4	17.0	14.5	14.4	14.2	7.4	8.2	7.6	5.9	5.6	5.6	4.5	4.4	4.4
Industry		5.2	5.7	4.5	4.8	4.0	3.6	3.9	3.2	4.7	4.6	4.7	5.5	6.9	6.9	6.5
Other		7.9	7.8	9.8	9.4	9.1	9.8	4.4	5.5	5.2	4.7	2.5	3.4	3.9	3.6	3.6
by Status																
Definite		65.9	64.0	58.4	57.5	57.0	53.8	43.4	37.6	35.8	30.2	25.8	23.8	21.7	20.0	19.3
Seeking		15.4	16.9	15.4	13.3	13.0	13.1	12.6	14.7	13.5	12.6	11.3	11.0	10.6	10.6	9.4
Study Plans		10.4	17.6	23.4	25.6	25.6	29.2	40.0	41.2	41.2	50.0	55.9	59.9	61.9	63.5	65.1
by Type																
Fellowship		10.4	17.6	23.4	25.6	25.6	24.8	26.9	24.2	22.5	29.9	35.2	34.6	34.9	37.0	37.2
Research Associate		-	-	-	-	-	-	8.8	11.1	13.2	13.7	14.1	16.9	18.5	19.2	20.8
Traineeship/Other		-	-	-	-	-	4.4	4.3	5.9	5.4	6.4	6.6	8.5	8.5	7.3	7.1
by Status																
Definite		10.4	17.6	23.4	25.4	25.1	28.0	32.8	33.6	31.3	39.9	44.4	48.1	49.6	49.9	51.0
Seeking		-	-	-	0.3	0.5	1.2	7.2	7.6	9.9	10.1	11.5	11.8	12.3	13.6	14.1
AGRICULTURAL SCIENCES	N	339	414	470	517	576	684	918	1016	1002	950	1012	1072	1130	1155	1157
Employment Plans	%	92.0	94.7	92.8	90.9	90.5	87.9	83.0	81.4	78.7	80.0	81.4	78.0	77.5	72.6	66.6
by Sector																
Academe		54.6	45.9	40.4	37.1	35.6	38.3	47.7	45.0	40.0	43.5	43.3	42.6	40.4	36.6	34.7
Government		24.8	32.1	35.1	30.4	33.3	32.9	15.1	18.1	18.1	17.7	17.3	16.2	14.3	13.6	13.0
Industry		5.9	8.5	7.9	9.9	8.7	10.2	13.6	10.3	14.5	12.9	16.0	12.9	17.3	16.1	13.8
Other		6.8	8.2	9.4	13.5	12.8	6.4	6.5	8.0	6.2	5.9	4.8	6.3	5.5	6.2	5.1
by Status																
Definite		74.3	74.2	73.4	73.9	75.0	75.6	64.9	58.5	60.0	59.5	61.6	61.5	57.9	47.8	48.4
Seeking		17.7	20.5	19.4	17.0	15.5	12.3	18.1	22.9	18.8	20.5	19.9	16.5	19.6	24.8	18.2
Study Plans		2.1	4.8	6.0	6.0	6.9	8.9	13.7	13.3	14.7	14.2	14.1	16.2	17.3	21.4	23.3
by Type																
Fellowship		2.1	4.8	6.0	6.0	6.9	7.7	6.1	4.6	4.5	6.0	4.3	4.1	5.3	5.9	6.3
Research Associate		-	-	-	-	-	-	6.8	7.0	8.0	7.4	9.2	10.8	10.2	14.3	14.8
Traineeship/Other		-	-	-	-	-	1.1	0.8	1.7	2.2	0.8	0.6	1.3	1.8	1.2	2.3
by Status																
Definite		2.1	4.8	6.0	6.0	6.9	8.3	8.7	7.6	8.4	9.2	7.9	9.9	11.0	12.2	15.7
Seeking		-	-	-	-	-	0.6	5.0	5.7	6.3	5.1	6.2	6.3	6.3	9.2	7.6
HEALTH SCIENCES	N	82	69	108	142	174	196	414	467	476	503	512	586	686	719	772
Employment Plans	%	87.8	89.9	90.7	91.5	89.7	86.2	80.9	73.0	75.6	78.7	76.4	75.8	78.3	77.3	72.8
by Sector																
Academe		45.1	34.8	38.9	41.5	41.4	40.8	48.3	46.9	42.4	47.1	45.7	44.5	42.4	43.8	43.7
Government		6.1	23.2	17.6	23.2	19.5	14.8	16.2	9.4	12.6	10.9	11.3	11.9	11.8	9.9	7.9
Industry		26.8	21.7	20.4	12.7	15.5	15.3	7.5	5.4	9.9	9.5	11.1	10.2	13.8	13.8	11.1
Other		9.8	10.1	13.9	14.1	13.2	15.3	8.9	11.3	10.7	11.1	8.2	9.0	10.2	9.9	10.1
by Status																
Definite		70.7	75.4	78.7	80.3	74.7	70.9	67.9	58.7	59.7	61.0	57.4	61.9	57.1	57.4	55.6
Seeking		17.1	14.5	12.0	11.3	14.9	15.3	13.0	14.3	16.0	17.7	18.9	13.8	21.1	19.9	17.2
Study Plans		0.0	5.8	9.3	4.2	8.0	11.2	12.1	18.0	11.1	15.7	14.6	19.5	16.3	16.1	15.4
by Type																
Fellowship		0.0	5.8	9.3	4.2	8.0	10.2	6.3	9.9	3.8	8.5	6.8	9.9	8.7	10.0	6.6
Research Associate		-	-	-	-	-	-	2.7	4.7	5.5	4.4	5.9	6.0	5.1	3.2	6.2
Traineeship/Other		-	-	-	-	-	1.0	3.1	3.4	1.9	2.8	2.0	3.6	2.5	2.9	2.5
by Status																
Definite		0.0	5.8	9.3	4.2	7.5	10.7	9.4	12.8	8.8	10.7	11.7	13.8	10.5	11.5	11.1
Seeking		-	-	-	-	0.6	0.5	2.7	5.1	2.3	5.0	2.9	5.6	5.8	4.6	4.3

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* Research Associate was included as a category in 1969. Traineeship and Other were included as categories in 1967.

** Seeking Postdoctoral Study Appointment was included as a category in 1969.

APPENDIX TABLE D (Continued)

SOCIAL SCIENCES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
ECONOMICS & ECONOMETRICS	N	332	352	418	527	627	747	853	894	853	885	801	767	761	794	861
Employment Plans	%	88.0	97.7	93.8	92.8	91.4	93.7	92.0	90.0	88.5	89.8	87.3	92.0	89.1	87.0	85.4
by Sector																
Academe		61.1	61.1	60.0	56.4	54.2	58.9	69.3	65.2	60.1	59.4	55.9	55.8	55.8	56.2	54.7
Government		11.1	20.7	17.7	20.1	23.3	22.4	9.6	10.9	13.4	15.7	14.2	16.0	12.7	14.0	14.5
Industry		7.2	5.4	6.0	6.3	4.8	4.8	6.0	6.2	6.7	7.5	9.5	10.2	13.1	9.3	8.5
Other		8.4	10.5	10.0	10.1	9.1	7.6	7.2	7.8	8.3	7.2	7.6	10.0	7.4	7.6	7.7
by Status																
Definite		73.2	86.6	83.7	83.7	84.1	85.3	82.1	79.5	74.4	73.2	69.7	77.6	75.4	69.1	67.7
Seeking		14.8	11.1	10.0	9.1	7.3	8.4	10.0	10.5	14.1	16.6	17.6	14.5	13.7	17.9	17.7
Study Plans		0.9	0.3	1.9	1.3	2.4	1.7	3.0	4.8	3.8	3.5	4.2	4.0	4.1	6.0	6.0
by Type*																
Fellowship		0.9	0.3	1.9	1.3	2.4	1.5	1.5	1.2	0.8	1.5	2.4	1.2	1.3	2.5	2.3
Research Associate		-	-	-	-	-	-	0.5	2.3	2.1	1.6	1.5	2.1	1.3	2.5	1.9
Traineeship/Other		-	-	-	-	-	0.2	1.0	1.2	0.8	0.4	0.4	0.8	1.4	1.0	1.9
by Status																
Definite		0.9	0.3	1.9	1.3	2.4	1.7	2.1	2.9	2.5	2.4	2.9	2.7	2.1	3.4	3.7
Seeking**		-	-	-	-	-	0.0	0.9	1.9	1.3	1.1	1.4	1.3	2.0	2.6	2.3
POLIT SCI & INT'L RELAT	N	211	238	278	337	408	580	636	911	909	791	695	585	536	514	490
Employment Plans	%	89.1	91.6	92.8	88.4	90.4	90.0	86.2	87.0	80.1	84.2	84.7	86.2	82.6	82.7	78.4
by Sector																
Academe		57.8	58.4	57.9	66.5	64.7	65.2	70.6	72.2	60.0	64.0	62.7	57.9	55.4	57.6	49.0
Government		19.9	19.3	19.1	13.1	13.2	12.1	6.8	7.2	8.6	9.4	9.9	12.8	11.0	9.7	10.8
Industry		1.9	3.4	3.2	1.2	1.5	1.7	2.4	2.0	3.5	4.0	3.9	7.5	9.0	6.2	8.8
Other		9.5	10.5	12.6	7.7	11.0	11.0	6.4	5.6	8.0	6.8	8.2	7.9	7.3	9.1	9.8
by Status																
Definite		73.0	77.3	79.9	76.3	81.4	79.8	73.0	73.1	60.9	58.5	61.0	61.4	59.5	54.5	53.9
Seeking		16.1	14.3	12.9	12.2	9.1	10.2	13.2	13.9	19.1	25.7	23.7	24.8	23.1	28.2	24.5
Study Plans		2.4	2.5	3.2	3.6	2.9	3.1	5.2	4.4	6.8	6.7	5.6	4.8	6.7	5.6	7.1
by Type																
Fellowship		2.4	2.5	3.2	3.6	2.9	3.1	2.4	2.1	2.9	3.0	2.9	2.9	3.5	2.7	3.1
Research Associate		-	-	-	-	-	-	1.6	2.0	2.4	1.5	1.9	1.7	1.7	1.0	2.2
Traineeship/Other		-	-	-	-	-	0.0	1.3	0.3	1.5	2.2	0.9	0.2	1.5	2.0	1.8
by Status																
Definite		2.4	2.5	3.2	3.6	2.9	3.1	3.6	2.6	3.4	3.8	2.2	3.9	3.7	2.5	3.1
Seeking		-	-	-	-	-	0.0	1.6	1.8	3.4	2.9	3.5	0.9	3.0	3.1	4.1
CLIN/COUNS/SCHOOL PSYCH	N	289	314	362	469	439	613	707	919	1061	1293	1464	1581	1681	1726	1708
Employment Plans	%	94.5	94.9	92.0	88.9	85.2	87.8	89.3	88.4	86.9	85.5	80.9	82.4	83.0	80.4	79.3
by Sector																
Academe		27.7	30.9	28.7	30.1	36.7	33.9	39.6	29.4	27.2	25.5	20.6	21.1	18.1	16.7	16.9
Government		32.5	35.0	36.2	32.2	27.1	25.9	27.9	31.0	24.1	25.4	18.9	17.8	16.1	12.9	13.5
Industry		4.8	6.7	1.9	1.9	2.1	3.3	2.8	3.7	5.4	5.3	7.5	9.7	14.0	15.7	15.6
Other		29.4	22.3	25.1	24.7	19.4	24.6	19.0	24.3	30.2	29.2	33.9	33.8	34.9	35.1	33.3
by Status																
Definite		74.4	79.0	73.8	72.1	68.8	68.4	63.9	65.9	62.1	60.0	52.5	58.3	57.3	52.8	57.5
Seeking		20.1	15.9	18.2	16.8	16.4	19.4	25.3	22.4	24.8	25.5	28.4	24.1	25.8	27.6	21.8
Study Plans		1.4	3.8	6.6	8.5	11.8	10.6	8.9	8.6	9.1	11.8	11.4	12.5	13.2	14.5	14.7
by Type																
Fellowship		1.4	3.8	6.6	8.5	11.8	8.2	5.9	4.9	4.2	6.7	5.1	6.8	7.7	8.5	9.5
Research Associate		-	-	-	-	-	-	0.6	0.2	0.5	0.5	0.8	0.8	1.1	0.7	1.0
Traineeship/Other		-	-	-	-	-	2.4	2.4	3.5	4.4	4.6	5.5	4.8	4.3	5.4	4.1
by Status																
Definite		1.4	3.8	6.6	8.1	11.6	10.3	7.5	6.5	7.1	7.5	8.4	9.1	8.1	8.9	10.4
Seeking		-	-	-	0.4	0.2	0.3	1.4	2.1	2.1	4.3	3.0	3.4	5.1	5.6	4.3
OTHER PSYCHOLOGY	N	454	458	494	544	700	851	1183	1360	1537	1590	1591	1517	1477	1504	1363
Employment Plans	%	82.6	87.1	84.8	84.2	80.4	83.1	79.6	75.6	73.4	75.2	68.8	70.7	70.4	69.6	65.6
by Sector																
Academe		45.4	43.9	46.8	48.2	50.4	53.7	56.7	53.2	46.3	45.3	37.2	32.3	30.5	30.1	26.0
Government		12.6	15.5	15.0	12.7	11.6	10.2	7.6	10.3	11.1	9.4	8.5	9.8	9.1	7.8	8.2
Industry		8.6	10.3	6.7	8.1	6.1	5.8	6.3	4.1	5.8	7.0	8.8	14.0	15.2	18.0	18.5
Other		16.1	17.5	16.4	15.3	12.3	13.4	9.0	7.9	10.2	13.4	14.3	14.6	15.6	13.8	12.9
by Status																
Definite		65.0	69.4	68.4	71.3	68.7	70.0	64.9	58.3	55.2	53.3	47.5	51.0	49.4	48.1	48.0
Seeking		17.6	17.7	16.4	12.9	11.7	13.0	14.7	17.3	18.2	21.8	21.3	19.6	21.1	21.5	17.6
Study Plans		5.5	11.6	12.3	11.8	13.7	12.7	15.2	14.6	15.3	18.6	21.2	21.1	18.6	20.6	23.1
by Type																
Fellowship		5.5	11.6	12.3	11.8	13.7	10.1	9.7	8.2	7.5	10.7	12.0	12.3	9.5	11.1	13.3
Research Associate		-	-	-	-	-	0.0	3.7	4.0	4.2	4.0	4.9	4.8	5.2	5.9	5.8
Traineeship/Other		-	-	-	-	-	2.6	1.8	2.4	3.9	3.9	4.3	3.9	3.9	3.6	4.0
by Status																
Definite		5.5	11.6	12.3	11.8	13.6	12.2	13.0	12.0	10.9	13.4	15.6	15.7	13.6	13.9	17.3
Seeking		-	-	-	-	0.1	0.5	2.2	2.6	4.4	5.2	5.6	5.4	4.9	6.7	5.8
OTHER SOCIAL SCIENCES	N	282	306	338	381	445	704	1187	1384	1524	1655	1488	1406	1381	1365	1419
Employment Plans	%	91.8	91.8	91.1	89.5	93.3	91.9	90.9	88.1	85.1	85.4	81.7	84.4	81.1	79.1	73.9
by Sector																
Academe		63.1	68.0	66.0	65.1	72.8	72.6	78.9	76.2	70.6	67.4	61.7	57.0	52.8	47.5	46.7
Government		13.8	11.8	12.1	14.4	11.7	12.2	4.0	4.5	5.6	6.2	7.1	9.4	8.7	8.8	7.6
Industry		2.5	3.6	2.4	2.1	1.1	2.0	2.9	2.5	2.4	3.5	4.2	5.8	9.8	8.8	8.3
Other		12.4	8.5	10.7	7.9	7.6	5.1	5.1	4.9	6.5	8.3	8.8	12.2	9.8	14.1	11.3
by Status																
Definite		77.7	79.7	79.9	80.8	82.5	82.1	78.0	76.7	68.9	65.8	58.8	57.7	55.0	51.9	49.5
Seeking		14.2	12.1	11.2	8.7	10.8	9.8	12.9	11.3	16.2	19.6	22.9	26.7	26.1	27.3	24.5
Study Plans		2.8	3.9	4.7	3.1	3.1	3.0	6.1	5.1	5.0	7.1	10.9	10.9	11.4	12.3	15.3
by Type																
Fellowship		2.8	3.9	4.7	3.1	3.1	2.3	3.8	2.4	2.6	3.5	6.3	6.8	5.7	7.4	8.9
Research Associate		-	-	-	-	-	-	1.4	1.6	1.4	2.5	2.6	3.0	3.6	3.7	4.1
Traineeship/Other		-	-	-	-	-	0.7	1.0	1.1	1.1	1.1	2.1	1.2	2.0	1.2	2.3
by Status																
Definite		2.8	3.9	4.7	3.1	2.9	2.6	4.3	3.3	3.2	4.5	6.5	6.7	6.6	6.3	9.2
Seeking		-	-	-	-	0.2	0.4	1.9	1.9	1.8	2.5	4.4	4.2	4.8	6.0	6.1

APPENDIX TABLE D (Continued)

HUMANITIES

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
HISTORY	N	317	364	366	530	645	741	1091	1186	1186	1095	852	745	692	617	563
Employment Plans	%	94.3	95.1	91.8	91.5	91.6	95.8	91.7	87.6	84.4	83.1	84.5	85.4	82.2	83.5	80.3
by Sector																
Academe		75.1	76.1	73.8	78.7	75.3	80.0	83.0	75.5	65.7	60.6	62.0	53.6	52.9	54.3	54.0
Government		7.9	8.5	7.4	5.5	7.3	7.7	2.5	4.1	4.8	6.7	6.1	9.4	6.8	7.9	6.4
Industry		0.3	0.0	1.4	0.6	0.6	0.8	0.9	1.4	3.2	2.6	4.5	6.8	8.7	5.7	6.4
Other		11.0	10.4	9.3	6.8	8.4	7.3	5.2	6.5	10.7	13.2	12.0	15.6	13.9	15.6	13.5
by Status																
Definite		78.5	80.2	77.0	81.9	85.0	86.8	78.7	64.3	55.3	52.0	53.2	57.0	52.6	48.8	51.7
Seeking		15.8	14.8	14.8	9.6	6.7	9.0	12.9	23.3	29.1	31.1	31.3	28.3	29.6	34.7	28.6
Study Plans		0.0	1.1	1.6	2.1	1.9	1.3	2.7	3.3	5.5	5.2	5.6	7.9	8.5	7.3	10.8
by Type*																
Fellowship		0.0	1.1	1.6	2.1	1.9	1.1	1.9	1.9	2.2	2.3	2.7	4.4	5.5	4.2	7.6
Research Associate		-	-	-	-	-	-	0.4	0.3	0.9	0.5	1.5	1.1	1.0	1.0	1.6
Traineeship/Other		-	-	-	-	-	0.3	0.5	1.2	2.4	2.4	1.4	2.4	2.0	2.1	1.6
by Status																
Definite		0.0	1.1	1.6	2.1	1.7	1.3	2.1	1.7	2.0	1.9	3.4	4.3	4.0	3.4	6.2
Seeking**		-	-	-	-	0.2	0.0	0.6	1.6	3.5	3.3	2.2	3.6	4.5	3.9	4.6
PHILOSOPHY	N	99	135	125	139	200	274	358	348	417	382	290	255	251	215	248
Employment Plans	%	87.9	92.6	90.4	86.3	91.5	95.6	90.2	83.3	82.0	86.4	83.8	81.2	86.1	74.9	81.5
by Sector																
Academe		75.8	83.0	76.0	77.7	75.5	87.6	83.8	77.6	71.5	75.7	68.3	63.9	70.5	57.7	62.5
Government		4.0	1.5	6.4	4.3	9.5	3.6	2.0	0.3	1.4	1.0	3.4	2.0	3.2	3.3	2.4
Industry		1.0	2.2	2.4	0.7	0.5	0.4	1.4	0.6	3.6	2.1	5.5	7.8	6.8	6.0	7.7
Other		7.1	5.9	5.6	3.6	6.0	4.0	3.1	4.9	5.5	7.6	6.6	7.5	5.6	7.9	8.9
by Status																
Definite		75.8	74.8	78.4	72.7	85.0	87.6	76.5	67.8	58.3	51.0	49.0	54.1	62.5	51.6	51.6
Seeking		12.1	17.8	12.0	13.7	6.5	8.0	13.7	15.5	23.7	35.3	34.8	27.1	23.5	23.3	29.8
Study Plans		2.0	3.7	0.8	3.6	1.5	1.1	2.5	4.6	5.0	4.5	5.5	7.5	5.6	9.8	8.5
by Type																
Fellowship		2.0	3.7	0.8	3.6	1.5	0.7	0.8	1.7	1.9	1.6	2.8	3.5	1.6	2.8	3.6
Research Associate		-	-	-	-	-	-	0.8	0.3	0.2	0.3	0.0	0.4	1.2	1.4	2.0
Traineeship/Other		-	-	-	-	-	0.4	0.9	2.6	2.9	2.6	2.8	3.5	2.8	5.6	2.8
by Status																
Definite		2.0	3.7	0.8	3.6	1.0	1.1	2.5	3.4	2.6	2.4	3.4	4.3	3.6	4.2	4.0
Seeking		-	-	-	-	0.5	0.0	0.0	1.1	2.4	2.1	2.1	3.1	2.0	5.6	4.4
ENGLISH/AMER LANG & LIT	N	333	356	463	528	671	930	1098	1370	1369	1214	1025	951	769	733	721
Employment Plans	%	92.5	97.4	95.7	93.8	94.0	96.2	91.9	90.1	85.8	87.1	85.7	88.1	91.5	89.6	86.0
by Sector																
Academe		83.8	89.1	84.9	84.3	85.5	86.2	87.5	84.1	73.1	73.8	68.7	69.5	73.0	72.6	71.3
Government		2.7	3.4	3.0	4.4	4.6	5.1	0.3	0.3	1.0	1.3	1.8	1.9	1.7	1.5	1.1
Industry		1.8	1.0	1.7	0.2	0.4	0.4	0.6	1.3	3.0	3.5	5.1	6.4	7.7	6.0	4.7
Other		4.2	3.9	6.0	4.9	3.4	4.5	3.5	4.4	8.6	8.6	10.1	10.3	9.2	9.5	8.9
by Status																
Definite		82.6	87.0	86.0	82.8	86.7	87.1	78.7	69.9	55.7	51.6	52.1	56.3	60.1	55.3	56.4
Seeking		9.9	10.4	9.7	11.0	7.3	9.1	13.2	20.1	30.1	35.5	33.6	31.9	31.5	34.4	29.5
Study Plans		0.9	1.3	1.1	0.4	0.6	1.0	1.6	2.4	2.9	3.5	4.1	4.6	2.0	3.1	5.8
by Type																
Fellowship		0.9	1.3	1.1	0.4	0.6	0.5	0.7	0.8	0.7	1.2	1.6	1.8	0.1	1.8	2.6
Research Associate		-	-	-	-	-	-	0.0	0.1	0.1	0.3	0.1	0.6	0.5	0.1	1.2
Traineeship/Other		-	-	-	-	-	0.4	0.9	1.5	2.2	1.9	2.4	2.2	1.3	1.3	1.9
by Status																
Definite		0.9	1.3	1.1	0.4	0.6	1.0	1.0	1.6	1.5	1.6	1.8	2.2	0.9	1.6	3.3
Seeking		-	-	-	-	-	0.0	0.6	0.8	1.4	1.8	2.3	2.4	1.0	1.5	2.5
FOREIGN LANGUAGES & LIT	N	157	168	196	271	380	526	647	812	887	835	637	535	490	492	445
Employment Plans	%	87.9	91.1	91.8	88.9	92.9	94.7	90.4	87.3	85.3	84.0	82.7	85.4	86.9	83.5	78.0
by Sector																
Academe		76.4	76.8	76.0	79.7	82.4	83.8	83.2	80.4	72.9	67.9	64.8	62.8	69.4	65.4	62.5
Government		3.8	3.6	6.1	4.4	5.3	4.4	0.8	1.1	1.6	2.2	2.8	2.1	2.2	2.6	0.7
Industry		0.0	0.6	0.5	0.4	0.5	0.8	1.2	0.9	1.8	2.0	4.7	6.9	4.5	5.3	4.3
Other		7.6	10.1	9.2	4.4	4.7	5.7	5.3	4.9	9.0	11.9	10.4	13.6	10.8	10.2	10.6
by Status																
Definite		72.0	80.4	77.6	80.1	83.9	82.3	72.2	65.4	56.0	48.1	48.8	46.9	55.5	53.7	51.7
Seeking		15.9	10.7	14.3	8.9	8.9	12.4	18.2	21.9	29.3	35.8	33.9	38.5	31.4	29.9	26.3
Study Plans		2.5	1.8	1.0	1.5	0.5	1.0	3.7	3.7	4.2	5.1	6.1	5.2	4.7	5.5	9.7
by Type																
Fellowship		2.5	1.8	1.0	1.5	0.5	0.6	1.5	1.4	1.9	2.4	2.5	1.9	2.7	3.0	5.6
Research Associate		-	-	-	-	-	0.0	0.9	0.4	0.9	0.8	0.3	1.1	0.6	1.4	1.3
Traineeship/Other		-	-	-	-	-	0.4	1.3	2.0	1.3	1.9	3.3	2.3	1.4	1.0	2.7
by Status																
Definite		2.5	1.8	1.0	1.5	0.3	1.0	2.5	2.7	1.9	1.3	2.7	1.7	2.4	1.8	4.9
Seeking		-	-	-	-	0.3	0.0	1.2	1.0	2.3	3.8	3.5	3.6	2.2	3.7	4.7
OTHER HUMANITIES	N	456	547	575	701	815	996	1084	1339	1311	1355	1427	1381	1356	1474	1484
Employment Plans	%	91.4	94.1	94.6	91.7	92.8	93.8	90.8	88.1	84.9	87.2	85.1	86.3	84.3	85.6	80.8
by Sector																
Academe		65.6	66.7	70.1	72.9	72.0	73.3	81.8	74.7	71.2	71.7	67.0	63.6	61.9	64.6	57.7
Government		4.8	5.5	7.3	5.1	9.0	6.1	0.5	1.4	1.6	1.9	2.4	2.6	1.6	2.2	2.6
Industry		2.4	2.2	1.0	0.9	1.5	1.1	1.0	1.5	2.3	2.4	4.7	6.1	8.1	6.4	6.3
Other		18.6	19.7	16.2	12.8	10.3	13.3	7.5	10.5	9.8	11.2	11.0	14.0	12.6	12.5	14.3
by Status																
Definite		76.3	81.7	83.7	80.9	83.6	81.4	74.9	70.1	63.4	59.1	57.1	58.9	57.4	55.1	52.2
Seeking		15.1	12.4	11.0	10.8	9.2	12.3	15.9	18.0	21.5	28.1	28.0	27.4	26.9	30.5	28.6
Study Plans		1.8	2.9	2.3	3.3	2.2	2.2	3.1	3.2	3.6	4.1	6.0	4.9	6.1	5.8	7.3
by Type																
Fellowship		1.8	2.9	2.3	3.3	2.2	2.1	2.1	1.1	1.6	1.7	2.5	2.8	3.5	2.8	3.6
Research Associate		-	-	-	-	-	-	0.3	0.4	0.9	0.8	1.2	0.6	1.0	1.4	1.5
Traineeship/Other		-	-	-	-	-	0.1	0.7	1.7	1.0	1.6	2.2	1.5	1.7	1.7	2.2
by Status																
Definite		1.8	2.9	2.3	2.9	2.2	2.1	2.2	1.5	2.1	2.0	2.7	2.9	3.5	2.6	3.8
Seeking		-	-	-	0.4	-	0.1	0.9	1.7	1.4	2.1	3.2	2.0	2.7	3.2	3.6

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* Research Associate was included as a category in 1969. Traineeship and Other were included as categories in 1967.

** Seeking Postdoctoral Study Appointment was included as a category in 1969.

APPENDIX TABLE D (Continued)

EDUCATION AND PROFESSIONAL FIELDS

		Year of Doctorate														
		1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986
EDUCATION, NONTEACH FLDS*		-	491	1218	1752	2318	2954	4103	4894	5242	5650	5171	5493	5252	4955	4814
Employment Plans	%	-	98.8	97.8	96.7	96.7	96.8	95.6	93.9	92.7	93.4	92.4	93.9	93.6	93.6	91.2
by Sector																
Academe		-	46.2	49.3	49.3	53.1	55.0	60.5	52.3	49.1	48.4	45.4	44.2	40.9	39.0	38.1
Government		-	8.1	9.0	10.5	8.1	8.0	7.9	9.0	10.9	10.5	11.5	10.9	10.4	10.5	11.0
Industry		-	0.8	0.9	1.3	1.2	1.3	1.6	1.8	2.0	2.2	3.0	5.9	7.8	6.8	7.0
Other		-	43.6	38.5	35.6	34.3	32.5	25.6	30.9	30.7	32.4	32.4	32.9	34.5	37.4	35.0
by Status																
Definite		-	86.2	82.5	83.0	83.3	82.5	72.3	71.7	69.1	69.0	67.2	70.1	70.6	70.8	70.1
Seeking		-	12.6	15.3	13.6	13.5	14.3	23.3	22.3	23.6	24.4	25.2	23.9	23.0	22.8	21.0
Study Plans		-	0.0	0.6	0.6	0.8	1.2	1.8	1.8	2.7	2.5	2.9	2.7	2.9	2.8	3.3
by Type																
Fellowship		-	0.0	0.6	0.6	0.8	0.8	0.7	0.5	0.9	0.6	0.9	0.7	0.8	0.7	1.1
Research Associate		-	-	-	-	-	-	0.3	0.3	0.6	0.6	0.6	0.6	0.9	0.9	1.5
Traineeship/Other		-	-	-	-	-	0.4	0.7	1.0	1.3	1.3	1.5	1.4	1.2	1.1	0.8
by Status																
Definite		-	0.0	0.6	0.6	0.8	1.1	1.4	1.0	1.5	1.4	1.5	1.6	1.5	1.2	1.8
Seeking		-	-	-	0.1	-	0.1	0.4	0.8	1.2	1.1	1.5	1.1	1.4	1.6	1.5
TEACHING, SCIENCE FIELDS*		-	76	154	189	233	300	428	489	321	287	239	302	225	231	238
Employment Plans	%	-	96.1	96.8	95.2	96.6	95.7	95.8	93.0	89.1	92.3	94.1	94.4	90.2	88.7	92.0
by Sector																
Academe		-	67.1	66.2	65.6	73.4	71.0	79.9	71.4	63.9	67.6	65.7	61.9	57.3	60.6	67.6
Government		-	13.2	8.4	14.3	7.7	8.0	2.1	4.9	6.5	5.9	5.0	8.3	5.8	6.5	4.6
Industry		-	5.3	0.6	0.0	1.3	0.7	0.7	0.2	0.3	1.4	3.3	2.0	3.1	4.8	2.5
Other		-	10.5	21.4	15.3	14.2	16.0	13.1	16.6	18.4	17.4	20.1	22.2	24.0	16.9	17.2
by Status																
Definite		-	78.9	77.3	84.7	86.7	84.3	75.7	75.1	65.4	68.6	68.2	71.9	61.3	65.8	68.9
Seeking		-	17.1	19.5	10.6	9.9	11.3	20.1	18.0	23.7	23.7	25.9	22.5	28.9	22.9	23.1
Study Plans		-	2.6	1.3	2.6	0.9	2.3	2.3	2.9	2.5	2.8	2.5	3.0	4.9	5.2	5.9
by Type																
Fellowship		-	2.6	1.3	2.6	0.9	1.3	0.7	1.2	1.2	0.7	0.8	0.7	1.8	2.6	2.1
Research Associate		-	-	-	-	-	-	0.7	0.6	0.3	0.7	1.7	1.3	1.8	1.7	2.9
Traineeship/Other		-	-	-	-	-	1.0	1.0	1.0	0.9	1.4	0.0	1.0	1.3	0.9	0.8
by Status																
Definite		-	2.6	1.3	2.6	0.9	2.0	1.6	1.4	1.2	1.7	1.3	1.3	3.1	2.6	3.4
Seeking		-	-	-	-	-	0.3	0.7	1.4	1.2	1.0	1.3	1.7	1.8	2.6	2.5
TEACHING, OTHER FIELDS*	N	1491	982	521	410	489	775	1326	1702	1678	1788	1784	1792	1775	1610	1550
Employment Plans	%	92.0	97.4	96.7	94.1	94.5	91.0	92.6	90.2	81.0	87.1	83.5	83.9	83.5	85.6	81.7
by Sector																
Academe		52.4	63.1	61.8	72.2	74.0	69.4	75.4	70.9	59.2	59.6	55.6	53.6	51.0	50.6	48.3
Government		7.9	8.9	9.0	5.1	6.3	6.6	3.8	3.9	6.0	7.1	7.0	6.8	6.9	6.5	6.1
Industry		0.8	1.2	1.5	0.7	1.4	0.5	1.4	0.7	1.5	1.8	3.6	3.6	5.5	6.8	7.2
Other		30.8	24.1	24.4	16.1	12.7	14.5	11.9	14.7	14.3	18.5	17.3	20.0	20.1	21.7	20.2
by Status																
Definite		76.8	82.3	85.2	82.2	81.8	78.5	73.3	70.0	61.7	66.6	59.8	64.1	60.7	59.6	58.2
Seeking		15.2	15.1	11.5	12.0	12.7	12.5	19.3	20.2	19.3	20.5	23.8	19.9	22.8	26.0	23.5
Study Plans		0.6	0.5	1.7	1.7	0.2	0.6	1.8	2.4	2.7	2.5	3.3	3.5	3.9	4.3	4.8
by Type																
Fellowship		0.6	0.5	1.7	1.7	0.2	0.4	1.0	0.6	0.8	0.6	1.3	1.2	1.4	1.5	1.8
Research Associate		-	-	-	-	-	-	0.4	0.6	0.9	1.0	0.8	1.1	1.4	1.2	1.9
Traineeship/Other		-	-	-	-	-	0.2	0.4	1.2	1.1	0.9	1.1	1.1	1.1	1.6	1.1
by Status																
Definite		0.6	0.5	1.7	1.7	0.2	0.6	1.4	1.0	1.8	1.5	1.7	1.9	2.1	2.7	2.2
Seeking		0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.4	1.0	1.0	1.6	1.6	1.7	1.6	2.6
BUSINESS AND MANAGEMENT	N	120	140	199	246	372	440	584	765	796	739	713	640	685	869	901
Employment Plans	%	95.8	98.6	94.5	94.3	94.1	90.7	95.0	92.5	89.4	94.6	94.2	94.1	89.8	91.0	88.3
by Sector																
Academe		80.0	76.4	79.4	76.8	71.0	66.8	79.6	78.0	74.2	79.0	78.7	75.8	75.6	74.3	73.6
Government		5.0	7.1	8.0	6.1	6.7	9.1	5.1	5.6	4.9	6.4	3.8	4.2	2.6	2.8	2.2
Industry		8.3	10.0	4.5	7.3	10.8	9.1	8.2	6.7	8.8	6.9	9.4	11.7	9.8	10.9	10.1
Other		2.5	5.0	2.5	4.1	5.6	5.7	2.1	2.2	1.5	2.3	2.4	2.3	1.8	3.0	2.4
by Status																
Definite		87.5	91.4	88.4	84.6	88.2	81.6	85.6	83.0	79.6	84.4	85.8	83.6	80.0	78.0	75.1
Seeking		8.3	7.1	6.0	9.8	5.9	9.1	9.4	9.5	9.8	10.1	8.4	10.5	9.8	13.0	13.2
Study Plans		0.0	0.0	0.5	1.2	0.0	0.2	0.5	0.9	1.3	1.2	1.5	1.3	0.6	1.8	2.3
by Type																
Fellowship		0.0	0.0	0.5	1.2	0.0	0.2	0.2	0.4	0.3	0.7	0.3	0.5	0.1	0.2	0.2
Research Associate		-	-	-	-	-	-	0.2	0.1	0.6	0.5	0.7	0.6	0.3	0.8	0.9
Traineeship/Other		-	-	-	-	-	0.0	0.2	0.4	0.4	0.0	0.6	0.2	0.1	0.8	1.2
by Status																
Definite		0.0	0.0	0.5	1.2	0.0	0.2	0.3	0.7	0.9	1.1	1.3	0.9	0.3	0.8	1.3
Seeking		-	-	-	-	-	0.0	0.2	0.3	0.4	0.1	0.3	0.3	0.3	1.0	1.0
OTHER PROFESSIONAL FLDS	N	90	95	110	142	170	252	304	436	785	971	1028	994	1099	1049	1035
Employment Plans	%	90.0	96.8	93.6	92.3	87.1	83.3	86.2	91.1	87.8	89.2	90.9	91.1	91.4	89.6	86.4
by Sector																
Academe		52.2	65.3	51.8	53.5	57.1	49.2	67.4	68.3	64.6	60.6	56.8	55.4	51.7	53.2	51.7
Government		14.4	16.8	24.5	17.6	15.3	17.5	9.2	7.3	5.0	6.8	9.0	8.4	10.2	7.7	7.4
Industry		8.9	3.2	4.5	4.9	3.5	2.8	3.6	6.0	3.2	3.5	5.7	7.3	8.9	8.8	9.5
Other		14.4	11.6	12.7	16.2	11.2	13.9	5.9	9.4	15.0	18.3	19.3	20.0	20.7	19.9	17.8
by Status																
Definite		82.2	85.3	76.4	80.3	75.9	72.6	70.1	74.3	71.5	69.2	70.9	73.8	70.2	69.2	67.4
Seeking		7.8	11.6	17.3	12.0	11.2	10.7	16.1	16.7	16.3	20.0	19.9	17.3	21.2	20.4	18.9
Study Plans		0.0	0.0	2.7	1.4	1.2	3.6	3.0	2.5	3.1	2.3	1.9	3.8	2.2	2.7	3.2
by Type																
Fellowship		0.0	0.0	2.7	1.4	1.2	2.8	0.7	0.5	1.0	0.5	1.0	1.5	0.7	0.9	1.3
Research Associate		-	-	-	-	-	-	2.0	0.5	0.5	0.5	0.4	1.0	0.8	0.6	1.0
Traineeship/Other		-	-	-	-	-	0.8	0.3	1.6	1.5	1.2	0.6	1.3	0.7	1.3	1.0
by Status																
Definite		0.0	0.0	2.7	1.4	1.2	2.8	1.6	1.4	1.5	0.9	1.1	2.1	1.6	1.5	1.6
Seeking		-	-	-	-	-	0.8	1.3	1.1	1.5	1.3	0.9	1.7	0.5	1.1	1.5

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* Education was differentiated in 1960. Data prior to 1960 appear under "Teaching, Other Fields."

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Doctorate Records File.

Form Approved
OMB No. 3145-0019
Approval Expires 1/87

SURVEY OF EARNED DOCTORATES, 1985-86

This form is to be returned to the GRADUATE DEAN, for forwarding to ....

The Office of Scientific and Engineering Personnel
National Research Council
2101 Constitution Avenue, Washington, D.C. 20418

Please print or type.

1. Name in full: ______________________ *Last Name* *First Name* *Middle Name*

Cross Reference: Maiden name or former name legally changed ______________________

2. Permanent address through which you could always be reached: (Care of, if applicable) ______________________

______________________ *Number* *Street* *City*

______________________ *State* *Zip Code* *Or Country if not U.S.*

3. U.S. Social Security Number: _ _ _ – _ _ – _ _ _ _

4. Date of birth: ______________ *Month* *Day* *Year* (10-14) Place of birth: ______________ *State* *Or Country if not U.S.* (15-16)

5. Sex: 1 ☐ Male 2 ☐ Female (17)

6. Marital status: 1 ☐ Married
2 ☐ Not married (including widowed, divorced) (18)

7. Citizenship:
0 ☐ U.S. native
1 ☐ U.S. naturalized
2 ☐ Non-U.S., Immigrant (Permanent Resident)
______________________ *(country of present citizenship)*
3 ☐ Non-U.S., Non-Immigrant (Temporary Resident) (19-21)
______________________ *(country of present citizenship)*

8. Are you physically handicapped? ☐ Yes ☐ No
If yes, is it: 1 ☐ Visual 2 ☐ Orthopedic
3 ☐ Auditory 4 ☐ Vocal
5 ☐ Other (Specify) ______________ (80)

9. What is your racial background? (Check only one)
0 ☐ American Indian or Alaskan Native
1 ☐ Asian or Pacific Islander
2 ☐ Black
3 ☐ White (22)

10a. Is your ethnic heritage Hispanic? ☐ Yes ☐ No (23)

10b. If yes, is it: 0 ☐ Mexican American
1 ☐ Puerto Rican
2 ☐ Other Hispanic (24)

11. Number of dependents: _______ Do not include yourself. (Dependent = someone receiving at least one half of his or her support from you) (25)

EDUCATION

12. Location of high school last attended: ______________________ *State* *Or Country if not U.S.* (26-27)

Year of graduation from high school: ______________ (28-29)

13. List in the table below all collegiate and graduate institutions you have attended including 2-year colleges and each degree earned. List chronologically, and include your doctoral institution as the last entry.

Institution Name	Location	Years Attended		Major Field Use Specialties List		Degree (if any)	Granted	
		From	To	Name	Number	Title of Degree	Mo.	Yr.

14. Enter below the title of your doctoral dissertation and the most appropriate classification number and field. If a project report or a musical or literary composition (not a dissertation) is a degree requirement, please check box. ☐ (12)

Title ______________________

Classify using Specialties List

Number ______________ Name of field ______________

15. Name the department (or interdisciplinary committee, center, institute, etc.) and school or college of the university which supervised your doctoral program: ______________________ *Department/Institute/Committee/Program* *School*

16. Name of your adviser for dissertation, project report or music/literary composition: ______________________ *Last Name* *First Name* *Middle Initial*

17. Please enter a "1" beside your primary source of support during graduate study. Enter a "2" beside your secondary source of support during graduate study. **Check** (✓) all other sources from which support was received. (Enter only **one** source as "1" and **one** source as "2")

Own/Family Resources
- a ___ Own Earnings
- b ___ Spouse's Earnings
- c ___ Family Contributions

University-Related
- d ___ Teaching Assistantship
- e ___ Research Assistantship
- f ___ University Fellowship
- g ___ College Work-Study
- h ___ Other ______________ *Specify*

Federal Support
- i ___ NIH Traineeship
- j ___ ADAMHA Traineeship
- k ___ ADAMHA Fellowship
- l ___ Other HHS
- m ___ NSF Fellowship
- n ___ Title VI Foreign Language and Area Studies Fellowship
- o ___ Graduate & Professional Opportunities Pgm. Fellowship (G*POP)
- p ___ Other Dept of Ed
- q ___ Veterans Administration (G.I. Bill, etc.)
- r ___ Other Federal ______________ *Specify*

U.S. Nationally Competitive Fellowships (Non-Federal)
- s ___ Ford Foundation
- t ___ Rockefeller Foundation
- u ___ Other Fellowship ______________ *Specify*

Student Loans
- v ___ Guaranteed Student Loan
- w ___ National Direct Student Loan
- x ___ Other Loan ______________ *Specify*

Other Sources
- y ___ Business/Employer Funds
- z ___ Other ______________ *Specify* (26-40)

18a. Please check the category which most fully describes your status during the year immediately preceding the award of the doctorate.
0 ☐ Full-time employed (Go to Item "18b")
1 ☐ Held fellowship
2 ☐ Held assistantship
3 ☐ Part-time employed
4 ☐ Not employed
5 ☐ Other (specify) ______________

18b. If full-time employed, what type of position did you hold?
6 ☐ College or university, faculty
7 ☐ College or university, non-faculty
8 ☐ Elem. or sec. school, teaching
9 ☐ Elem. or sec. school, non-teaching
(11) ☐ Industry or business
(12) ☐ Other (specify) ______________
(50)

POSTGRADUATION PLANS

19. What is the status of your current postgraduate plans?
0 ☐ Am returning to, or continuing in, predoctoral employment
1 ☐ Have signed contract or made definite commitment
2 ☐ Am negotiating with one or more specific organizations
3 ☐ Am seeking position but have no specific prospects
4 ☐ Other (specify) ______________ (51)

20. What best describes your immediate postgraduate plans?
0 ☐ Postdoctoral fellowship
1 ☐ Postdoctoral research associateship — Go to Item "21"
2 ☐ Traineeship
3 ☐ Other study (specify) ______________
4 ☐ Employment (other than 0,1,2,3)
5 ☐ Military service — Go to Item "22"
6 ☐ Other (specify) ______________ (52)

21. If you plan to have a postdoctoral fellowship, associateship, traineeship, or otherwise undertake further study

A. What was the **most** important reason for taking a postdoctoral appointment? (Check only one.)
0 ☐ To obtain additional research experience in my doctoral field
1 ☐ To work with a particular scientist or research group
2 ☐ To switch into a different field of research
3 ☐ Could not obtain the desired type of employment position
4 ☐ Other reason (specify) ______________ (53)

B. What will be the field of your postdoctoral study? Please enter number from Specialties List ______________ (54-56)

C. What will be the primary source of research support?
0 ☐ U.S. Government
1 ☐ College or university
2 ☐ Private foundation
3 ☐ Nonprofit, other than private foundation
4 ☐ Other (specify)
____
6 ☐ Unknown (57)
Go to Item "23"

22. If you plan to be employed, enter military service, or other—

A. What will be the type of employer?
a ☐ U.S. 4-year college or university other than medical school
b ☐ Foreign university
c ☐ Medical school
d ☐ Jr. or community college
e ☐ Elem. or sec. school
f ☐ Foreign government
g ☐ U.S. Federal government
h ☐ U.S. state government
i ☐ U.S. local government
j ☐ Nonprofit organization
k ☐ Industry or business
l ☐ Self-employed
m ☐ Other (specify) ______________ (58)

B. Indicate what your **primary** work activity will be with "1" in appropriate box; **secondary** work activity (if any) with "2" in appropriate box.
0 ☐ Research and development
1 ☐ Teaching
2 ☐ Administration
3 ☐ Professional services to individuals
5 ☐ Other (specify) ______________ (59-60)

C. In what field will you be working? Please enter number from Specialties List ______________ (61-63)

D. Did you seriously consider undertaking postdoctoral study?
Yes ___ No ___ (64)
If yes, why did you decide against the postdoctoral?
0 ☐ No postdoctoral appointment available
1 ☐ Felt that I would derive little or no benefit from a postdoctoral appointment
2 ☐ Postdoctoral available but stipend inadequate
3 ☐ Had more attractive employment opportunity
4 ☐ Other (specify) ______________ (65)
Go to Item "23"

23. What is the name and address of the organization with which you will be associated?

____
Name of Organization

____
Street *City, State* *Or Country if not U.S.* (66-71)

BACKGROUND INFORMATION

24. Please indicate, by circling the highest grade attained, the education of

your father:	none	1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4	MA, MD PhD	Postdoctoral	(72)
		Elementary School	High School	College	Graduate		
your mother:	none	1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4	MA, MD PhD	Postdoctoral	(73)
	0	1 2 3	4 5	6 7	8 9	(11)	

Signature ______________ Date ______________ (74-76)

If you would like to receive a summary of the results of this survey, please check box. ☐ (79)

SPECIALTIES LIST

Instructions: The following field listing is to be used in responding to items 13, 14, 21b, and 22c. If a field marked with an asterisk (*) is chosen in item 13 or 14, please write in your field of specialization in the space provided.

AGRICULTURE

000 Agricultural Economics

005 Animal Breeding & Genetics
010 Animal Nutrition
019 Animal Sciences, Other*

020 Agronomy
025 Plant Breeding & Genetics
030 Plant Path. (See also 120)
039 Plant Sciences, Other*

040 Food Sciences
045 Soil Sciences
050 Horticulture Science
055 Fisheries Sciences
060 Wildlife Management
065 Forestry Science

098 Agriculture, General
099 Agriculture, Other*

BIOLOGICAL SCIENCES

100 Biochemistry
105 Biophysics

110 Bacteriology
115 Plant Genetics
120 Plant Path. (See also 030)
125 Plant Physiology
129 Botany, Other*

130 Anatomy
133 Biometrics & Biostatistics
136 Cell Biology
139 Ecology
142 Embryology
145 Endocrinology
148 Entomology
151 Immunology
154 Molecular Biology
157 Microbiology
160 Neurosciences
163 Nutritional Sciences
166 Parasitology
169 Toxicology
170 Genetics, Human & Animal
175 Pathology, Human & Animal
180 Pharmacology, Human & Animal
185 Physiology, Human & Animal
189 Zoology, Other*

198 Biological Sciences, General
199 Biological Sciences, Other*

HEALTH SCIENCES

200 Audiology & Speech Pathology
210 Environmental Health
215 Public Health
220 Epidemiology
230 Nursing
240 Pharmacy
250 Veterinary Medicine
298 Health Sciences, General
299 Health Sciences, Other*

ENGINEERING

300 Aerospace, Aeronautical & Astronautical
303 Agricultural
306 Bioengineering & Biomedical
309 Ceramic
312 Chemical
315 Civil
318 Communications
321 Computer
324 Electrical, Electronics
327 Engineering Mechanics
330 Engineering Physics
333 Engineering Science
336 Environmental Health Engin.
339 Industrial
342 Materials Science
345 Mechanical
348 Metallurgical
351 Mining & Mineral
354 Naval Arch. & Marine Engin.
357 Nuclear
360 Ocean
363 Operations Research (See also 465, 930)
366 Petroleum
369 Polymer
372 Systems
398 Engineering, General
399 Engineering, Other*

COMPUTER AND INFORMATION SCIENCES

400 Computer Sciences*
410 Information Sci. & Systems*

MATHEMATICS

420 Applied Mathematics
425 Algebra
430 Analysis & Functional Anal.
435 Geometry
440 Logic (See also 785)
445 Number Theory
450 Probability & Math. Statistics (See also 690)
455 Topology
460 Computing Theory & Practice
465 Operations Research (See also 363, 930)
498 Mathematics, General
499 Mathematics, Other*

PHYSICAL SCIENCES

Astronomy

500 Astronomy
505 Astrophysics

Atmospheric & Meteorological Sciences

510 Atmospheric Physics & Chem.
512 Atmospheric Dynamics
514 Meteorology
518 Atmos. & Meteorol. Sci., Gen.
519 Atmos. & Meteorol. Sci., Other*

Chemistry

520 Analytical
522 Inorganic
524 Nuclear
526 Organic
528 Pharmaceutical
530 Physical
532 Polymer
534 Theoretical
538 Chemistry, General
539 Chemistry, Other*

Geological Sciences

540 Geology
542 Geochemistry
544 Geophysics & Seismology
546 Paleontology
548 Mineralogy, Petrology
550 Stratigraphy, Sedimentation
552 Geomorphology & Glacial Geology
554 Applied Geology
558 Geological Sciences, General
559 Geological Sciences, Other*

Physics

560 Acoustics
561 Atomic & Molecular
562 Electron
564 Elementary Particle
566 Fluids
568 Nuclear
569 Optics
570 Plasma
572 Polymer
574 Solid State
578 Physics, General
579 Physics, Other*

Other Physical Sciences

580 Environmental Sciences
585 Hydrology & Water Resources
590 Oceanography
595 Marine Sciences
599 Physical Sciences, Other*

PSYCHOLOGY

600 Clinical
603 Cognitive
606 Comparative
609 Counseling
612 Developmental
615 Experimental
618 Educational (See also 822)
621 Industrial & Organizational (See also 935)
624 Personality
627 Physiological
630 Psychometrics
633 Quantitative
636 School (See also 825)
639 Social
648 Psychology, General
649 Psychology, Other*

SOCIAL SCIENCES

650 Anthropology
652 Area Studies
658 Criminology
662 Demography
666 Economics
668 Econometrics
670 Geography
674 International Relations
678 Political Sci. & Government
682 Public Policy Studies
686 Sociology
690 Statistics (See also 450)
694 Urban Studies
698 Social Sciences, General
699 Social Sciences, Other*

HUMANITIES

History

700 History, American
705 History, European
710 History of Science
718 History, General
719 History, Other*

Letters

720 Classics
723 Comparative Literature
729 Linguistics
732 Literature, American
733 Literature, English
734 English Language
736 Speech & Debate
738 Letters, General
739 Letters, Other*

Foreign Languages and Literature

740 French
743 German
746 Italian
749 Spanish
752 Russian
755 Slavic (other than Russian)
758 Chinese
762 Japanese
765 Hebrew
768 Arabic
769 Other Languages*

Other Humanities

770 American Studies
773 Archeology
776 Art History & Criticism
780 Music
785 Philosophy (See also 440)
790 Religion (See also 984)
795 Theatre
798 Humanities, General
799 Humanities, Other*

EDUCATION

800 Curriculum & Instruction
805 Educ. Admin. & Superv.
810 Educational Media
815 Educ. Stat. & Research
820 Educ. Testing, Eval. & Meas.
822 Educational Psychology (See also 618)
825 School Psych. (See also 636)
830 Social Foundations
835 Special Education
840 Student Counseling & Personnel Services
845 Higher Education

Teacher Education

850 Pre-elementary
852 Elementary
854 Junior High
856 Secondary
858 Adult & Continuing

Teaching Fields

860 Agricultural Educ.
861 Art Educ.
862 Business Educ.
864 English Educ.
866 Foreign Languages Educ.
868 Health Educ.
870 Home Economics Educ.
872 Industrial Arts Educ.
874 Mathematics Educ.
876 Music Educ.
878 Nursing Educ.
880 Physical Educ.
882 Reading Educ.
884 Science Educ.
885 Social Science Educ.
886 Speech Educ.
888 Trade & Industrial Educ.
889 Teacher & Educ. Specific Subject Areas, Other*

898 Education, General
899 Education, Other*

PROFESSIONAL FIELDS

Business & Management

900 Accounting
905 Banking & Finance
910 Business Admin. & Management
915 Business Economics
920 Marketing Mngmnt. & Research
925 Business Statistics
930 Operations Research (See also 363, 465)
935 Organiz. Beh. (See also 621)
938 Business & Mngmnt., General
939 Business & Mngmnt., Other*

Communications

940 Communications Research
945 Journalism
950 Radio & Television
958 Communications, General
959 Communications, Other*

Other Professional Fields

960 Architec. & Environ. Design
964 Home Economics
968 Law
972 Library & Archival Science
976 Public Administration
980 Social Work
984 Theology (See also 790)
988 Professional Fields, General
989 Professional Fields, Other*

999 OTHER FIELDS*

CODE NUMBERS FOR FIELDS DISPLAYED IN TABLE 2

Physics and Astronomy (500-505, 560-579)
Chemistry (520-539)
Earth, Atmospheric and Marine Sciences (510-519, 540-559, 580-599)

Physical Sciences Subtotal (500-599)
Mathematics (420-499)
Computer Sciences (400-410)
Engineering (300-399)

EMP Total (300-599)

Biochemistry (100)
Other Biosciences (105-199)

Biosciences Subtotal (100-199)
Health Sciences (200-299)
Agricultural Sciences (000-099)

Life Sciences Total (000-299)

Psychology (600-649)
Economics and Econometrics (666, 668)
Anthropology and Sociology (650, 686)
Political Science and International Relations (674, 678)
Other Social Sciences (652-662, 670, 682, 690-699)

Social Sciences Total (600-699)

Total Sciences (000-699)

History (700-719)
English and American Language and Literature (732-734)
Foreign Languages and Literature (740-769)
Other Humanities (720-723, 729, 736-739, 770-799)

Humanities Total (700-799)

Education (800-899)

Business and Management (900-939)

Other Professional Fields (940-989)

Total Non-Sciences (700-989)

Other or Unspecified (999)

TITLES OF DEGREES INCLUDED IN THE SURVEY OF EARNED DOCTORATES

DAS	Doctor of Applied Science	DM	Doctor of Music
DArch	Doctor of Architecture	DMA	Doctor of Musical Arts
DA	Doctor of Arts	DME	Doctor of Music Education
DBA	Doctor of Business Administration	DML	Doctor of Modern Languages
JCD	Doctor of Canon Law	DNSc	Doctor of Nursing Science
DCJ	Doctor of Criminal Justice	PhD	Doctor of Philosophy
DCrim	Doctor of Criminology	DPE	Doctor of Physical Education
EdD	Doctor of Education	DPS	Doctor of Professional Studies
DEng	Doctor of Engineering	DPA	Doctor of Public Administration
DESc	Doctor of Engineering Science	DPH	Doctor of Public Health
ScDE	Doctor of Engineering Science	DRec/DR	Doctor of Recreation
DEnv	Doctor of Environment	DRE	Doctor of Religious Education
DED	Doctor of Environmental Design	DSM	Doctor of Sacred Music
DFA	Doctor of Fine Arts	STD	Doctor of Sacred Theology
DF	Doctor of Forestry	DSc	Doctor of Science
DGS	Doctor of Geological Science	DScH	Doctor of Science and Hygiene
DHS	Doctor of Health and Safety	LScD	Doctor of Science and Law
DHL	Doctor of Hebrew Literature	DScD	Doctor of Science in Dentistry
DHS	Doctor of Hebrew Studies	DScVM	Doctor of Science in Veterinary Medicine
DIT	Doctor of Industrial Technology		
SJD	Doctor of Juridical Science	DSSc	Doctor of Social Science
JSD	Doctor of Juristic Science	DSW	Doctor of Social Work
DLS	Doctor of Library Science	ThD	Doctor of Theology
DMSc	Doctor of Medical Science		
DMin/DM	Doctor of Ministry		

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93